FORKLIFT OPERATOR REFRESHER TRAINING (FORT)

ASYNCHRONOUS E-LEARNING

LEANERS GUIDE

FORKLIFT OPERATOR REFRESHER TRAINING (FORT) -ASYNCHRONOUS E-LEARNING

FORKLIFT OPERATOR REFRESHER TRAINING (FORT) (ASYNCHRONOUS TRAINING)

COURSE OVERVIEW

The Forklift Operator Refresher Training Course aims for Forklift Operator to complete mandatory refresher training in compliance with the WSH Act Section 31(4), MOM will require all forklift operators to attend a refresher course at least once every three years.

The course will provide forklift operators with the essential skills through both theory and practical training. It will cover key safety concepts, industry guidelines, learning from past incidents and hands-on practice. Participants will refresh their knowledge on practical forklift operation skills, and learn to recognize and manage potential risks, equipping them for everyday operational challenges. This will strengthen the safety awareness of forklift operators and reinforce compliance with safety regulations

COURSE REQUIREMENTS

To register for this course, learners must be above 18 years of age and are assumed to:

1. Valid Forklift License
2. Be able to interpret work instructions and technical information
3. Be able to listen speak, read and write English at a proficiency level equivalent to the Employability Skills (ES) Level 3
4. Be able to process numbers at a proficiency level equivalent to the (ES) Level 3

COURSE DETAILS

Duration: 4 Hours asynchronous e-learning and 8 hours class & assessment

ATTENDANCE REQUIREMENTS

100% for asynchronous learning and practical training cum assessment

COURSE OUTLINE

1. Relevant WSH Legislations / SS573 for forklift operation
2. Refresh on the correct interpretation of the Load Chart
3. Forklift stability
4. Pre-Operational & Post Checks on a Forklift Machine
5. Techniques and requirements for safe operations
6. Highlights on the common safety lapses by forklift operators and the consequences
7. Safety Rules (Do's and Don't s)
8. Carry out forklift operations (Practical)

Workshop (In person training)

1. 4 case studies
2. Forklift Practical inclusive of 15 min practical assessment

4 case studies:

- 2 cases on identification of hazards related to forklift operation and its consequences and the safety precautionary measures required **(1 hour per case)**
- 2 accident cases involving forklift operation and discuss the likely causes and safety precautions required to prevent such an accident **(1 hour per case).**

Practical Assessment

Practical assessment: 15 mins, as stated below:

- ✓ Inspect forklift machine (2 mins)
- ✓ Carry out forklift operations (11 mins)
- ✓ Parking (in & out of parking lot) (2mins)
- ✓ Maneuvering (S and L shape) with and without load (3 mins)
- ✓ Loading and Unloading (6 mins)
- ✓ Reinstate and handover forklift (2 mins)

Practical: 1: 1 (Trainee: Trainer, Practical session)

[Group of 5 trainees to 1 Forklift/Trainer (or Assessor]

Written Test

Forklift Operator Refresher Training (Asynchronous training):

E-assessment: 30 Formative MCQs for 45 mins

During the administration of the written assessment, there shall be an assessor to ensure the integrity of the assessment process. The trainer for the course is not permitted to be the assessor for the same course during the assessment. An invigilator can be appointed in place of the assessor, but the trainer for the course must be on standby to make clarification on the questions where needed.

MODULE 01

WORKPLACE SAFETY & HEALTH LEGISLATIONS

SL NO	CONTENT
1.1	WORKPLACE SAFETY & HEALTH ACT
1.2	WORKPLACE SAFETY AND HEALTH CODE OF PRACTICE RELATING TO FORKLIFT PRACTICE
1.3	PENALTY FOR NON COMPLIANCE OF WORKPLACE SAFETY AND HEALTH ACT
1.4	REFERENCES FORKLIFT ACCIDENT CASE

MODULE 01: WORKPLACE SAFETY & HEALTH LEGISLATIONS

1.1 Workplace Safety & Health Act

Guide to WSH ACT

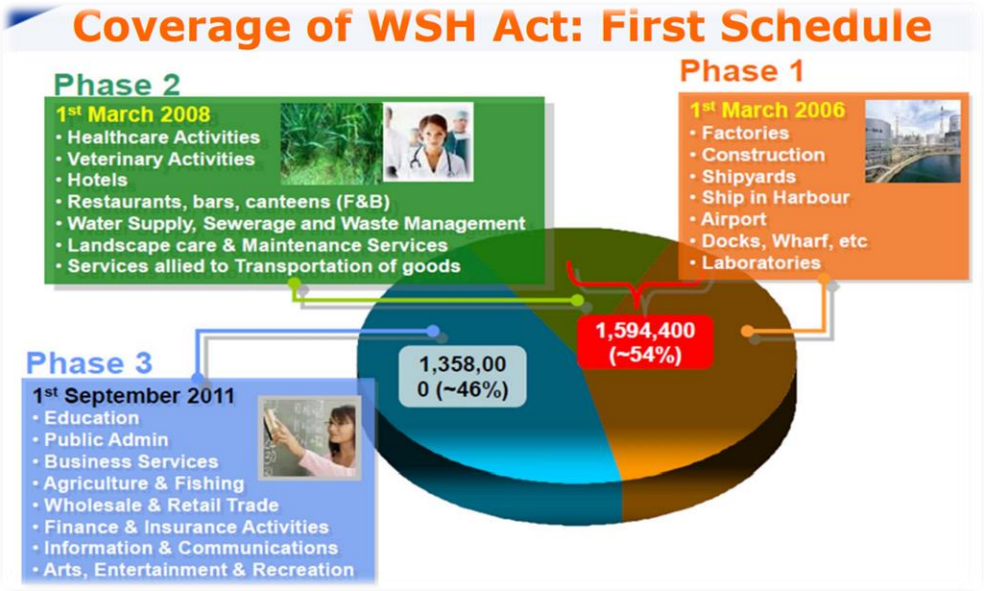
Major workplace accidents in 2004

- 29 April 2004: Fusionpolis - 2 deaths; 29 injured
- 17 May 2004: One Raffles Quay - 2 deaths
- 29 May 2004: Keppel Shipyard - 7 deaths

On 1 March 2006, the Workplace Safety and Health (WSH) Act replaced the 33 year old Factories Act.

1st March 2006

It covers all industries such as factories, shipyards and construction worksites.
From 1st Mar 2008, the WSH Act will extend its coverage to the Transportation Allied Services sector (Logistics, Freight Forwarding, Cargo Surveying Services).



On 1st March 2006 the Workplace Safety and Health Act was introduced, replacing the Factories Act.

3 Key Principles	Desired Mindset Change	
	From	To
Reduced risk at source by requiring all stakeholders to eliminate or minimize the risks they create	Managing risks	Identifying and eliminating risks before they are created
Greater industry ownership of WSH outcomes	Compliance with "letter of the law"	Proactive planning to achieve a safe & healthy workplace
Prevent accidents through higher penalties for poor safety and health management	Accidents are costly	Poor safety & health management is costlier

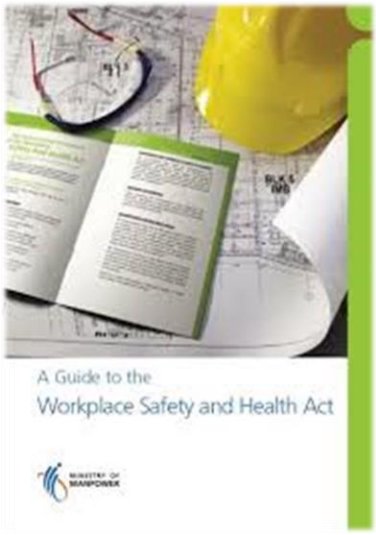
Total WSH programme is an initiative by the Workplace Safety and Health Council.

A Healthy Workforce in Safe Workplaces; A Country Renowned for Best Practices in Workplace Safety & Health.

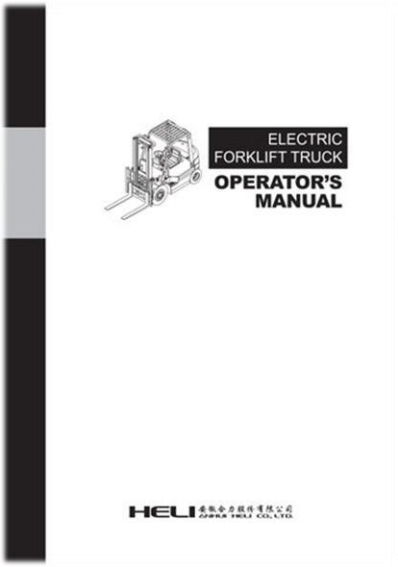
1.2 Workplace safety and health code of practice relating to forklift practice

- This code specifies the safety requirements for the manufacture, application, operation and maintenance of powered counterbalanced forklifts. It lays down the responsibilities of the various parties involved.
- Singapore Standards are nationally recognize documents established by consensus. Standards are published documents setting out specifications and procedures for the design, use or performance of materials, products, processes, services and systems.
- This code specifies the safety requirements for the manufacture, application, operation and maintenance of powered counterbalanced forklifts. It lays down the responsibilities of the various parties involved.
- This code is not applicable to industrial forklifts that do not apply lifting with forks and the use of
- counterweights for balance. To this code, the term forklift refers to powered-counterbalanced forklift.

- Singapore Standards are nationally recognized documents, established by consensus. They are functional or technical requirements in the form of specifications for materials, product system or process, codes of practice, methods of test, terminologies and guides.



- The Workplace Safety and Health Act is a legislation relating to the safety, health and welfare of persons at work in a workplace.



- This operator's manual provides for the proper operation, easy maintenance and periodical inspection.
- Prior to operation, read this manual carefully for safe and efficient operation.

SS 573: Code of Practice for the safe use of powered counterbalanced forklifts

3.2 Authorised person

Person approved by his company to carry out the defined task.

3.5 Competent person

A person who, through formal training and work experience, possesses the practical and theoretical knowledge of forklifts to enable the safe operation of counterbalanced forklifts.

3.13 Medically fit

Persons who are medically fit are in general good health and not subject to deafness, defective sight or any other infirmity which would render the person unfit to perform the duties of a forklift operator safely.

3.16 Operator

A person who:

(a) is trained on the operation of the forklift and authorised by the user to operate it; and

(b) has attended refresher training on the operation of the forklift within 3 years.

4 Operating safety rules and practices for the user and the operator

4.1 For the user

4.1.1 Operators' qualifications

Users of forklift shall ensure that only competent operators are authorised to operate forklifts and prevent unauthorised operation of forklifts.

4.1.2 Operation in hazardous, flammable and explosive environments

Users of forklifts shall ensure the following during operation in hazardous, flammable and explosive environments:

(a) Only suitably protected forklifts shall be selected for safe presence and operation in such environment.

(b) Forklift operator shall be adequately informed of the hazards present in such environment and safety precautions to be taken.

(c) Such forklifts and the area of operation shall be clearly marked with appropriate signage.

4.1.3 Passengers

Passengers shall not ride on forklifts or forks. Forklifts shall not be used for lifting any person by any means at all times. No man cage or such shall be used on forklifts.

4.1.4 Forklift operation area

User to define and designate area for the forklift to operate. Designated area is to be indicated by signage.

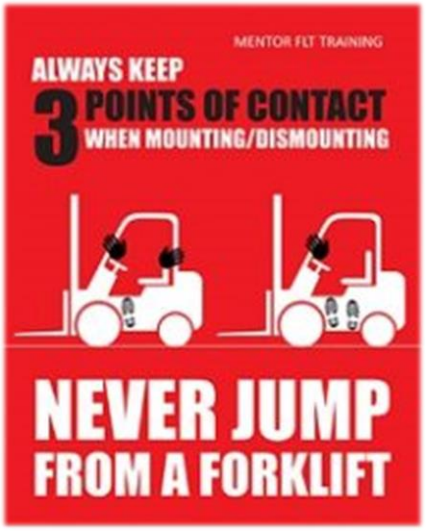
4.1.5 Risk management

Risk assessment is to be carried out for all forklift related activities. Control measures using the hierarchy of controls shall be implemented to bring risk levels to acceptable
Levels

Proper PPE for Forklift Operations

1. Analyse the hazards in the working environment, and provide protection whenever appropriate and necessary (e.g., wear respirators in chemically hazardous environments.
2. The forklift operators must be appropriately dressed for their job.
3. Personal Protective Equipment (PPE) such as hi-visibility jackets, hard-hats and safety shoes should be worn throughout operation.
4. Avoid operating a forklift with wet and greasy hands or shoes can cause accidents when your hands slip on the forklift controls, or when you slip and fall.
5. Use the steps and hand-grips securely for entering the forklift (3 pt contact)
6. Adjust the seating position to a comfortable level.
7. Seat belt fastened before use.

Always look around and keep a sharp eye out for obstacles and warning signs. Follow work site rules and do not venture off from forklift roadways.



Code of Practice

DO'S

- Ensure operators are trained and licensed to use the forklift
- Perform visual checks before each work shift/day
- Wear appropriate personal protective equipment when inspecting and operating
- Keep arms and legs inside the cab
- Wear seat belts while driving
- Report any damage/defects and incidents to safety manager(s)
- Mark defects/damages with bold and clear warning labels, sign and tags
- Plan the route you will take tor accurate hazard assessment and prevention
- Drive within the posted speed limit and in approved areas
- Sound horn at intersections, blind spots and when backing up
- Keep sufficient distance from other vehicles and forklifts
- Take care when approaching pedestrians. Always give them right of way

DON'TS

- Operate a forklift without training and a license
- Operate a forklift that is posted for defects and damage
- Load a forklift beyond its capacity
- Brake suddenly or take sharp turns
- Take a turn on slopes or inclines
- Drive with slippery hands, gloves or boots
- Drive beyond the posted speed limit
- Operate if the load obscures your vision
- Leave the forklift unattended
- Use forks to push or drag a load
- Allow riders on a forklift
- Allow people to stand or walk under lifted forks

1.3 Penalty for non compliance s of Workplace Safety and Health Act

General penalties for offenses for which no penalty is prescribed under the Act.

Category of Offender	Maximum Fine		Maximum Imprisonment	Conditions
	1st conviction	2nd and subsequent convictions		
Individual Persons	$200,000	$400,000	2 years	Either or both
Corporate Body	$500,000	$1 million		
Persons at work who misused or failed to use protective equipment provided	$1,000	$2,000		
1st conviction for an offence that causes the death of another person 2nd & subsequent convictions of the same offence that causes the death of another person				

Legislation and other organizational requirements

Employee. As an employee, you must: Follow the workplace safety and health system, safe work procedures or safety rules implemented at the workplace. Not engage in any unsafe or negligent act that may endanger yourself or others working around you.

- Ensure **workers** are provided with sufficient instruction, training and supervision so that they can work safely.
- You should not tamper with any safety device or undertake any wilful or reckless acts.
- You should also always use any personal protective equipment provided at work.
- Shall not willfully or recklessly interfere with or misuse any appliances, protective clothing, equipment provided to secure the safety, health or the welfare of the persons at work.

Report accident or notify MOM

You must report a work-related accident to MOM. If it results in the death of an employee. The employee was given leave (MC or hospitalization leave) or light duty.

Work-related accidents, workplace accidents, Dangerous Occurrences and Occupational Diseases must be reported to MOM . The reporting requirements differ depending on the type of accident. If there is doubt after you have completed investigations, please report.

Duties & Responsibilities of a Forklift Driver

- Only trained, qualified & authorized operators to drive forklift

- Check that forklift is in good working condition
- Check work environment for hazards, obstructions and dangers

- Load is within forklift lifting capabilities
- Observe proper safe load handling practices & safe work procedures
- Follow safe operating procedures and equipment manufactures instructions.

- Observe and apply safety in house rules in accordance with organizational procedures in compliance with WSH Act

Best practices of a Forklift Driver

The following best practices are a significant first step toward creating a safer workplace:

- Do not drive a forklift unless you have received thorough training on safe operating procedures and site-specific safety considerations.
- Always wear a seatbelt while operating a forklift. If it does not have a seat belt, have one installed.
- Understand the operating limitations of the forklift and never exceed the rated load.
- Ensure there is enough clearance when raising and lowering materials.
- Maintain a safe distance from platform and ramp edges, and never turn around on sloped surfaces.
- Watch out for pedestrians. Create safe forklift operating paths and evaluate

Best practices for Forklift Drivers / Pedestrians.

The following best practices are a significant first step toward creating a safer workplace:

- Don't operate a forklift unless you are trained, qualified and authorized.
- Do not engage in horseplay.
- Do not distract forklift operators.
- Do not smoke at refueling areas.
- Be alert at forklift operations areas. Always practice "**STOP", "WAIT", "GO** before you proceed

.

- Consider wearing highly visible protective equipment to make it easier for forklift operators to see you.

- Traffic rules apply to pedestrians as well as forklifts. Make sure you only walk at pedestrian lanes.

- Communicate with operators. Inform them that you'll be entering the forklift area.
- Before entering the forklift lane, stop, look both ways, and make eye contact with the operator.

1.4 References Forklift accident case: The penalty for non-compliance

Prosecution cases under the workplace safety and health act

Date of Accident: 24 Feb 2010

Location of Accident: Link Road

Employer: Syntech Engineers Pte Ltd

Description of Accident:

On 24 Feb 2010, two workers, Workers **A** and **B** were tasked by the employer to install a tool box onto the undercarriage of a lorry. Worker A was positioned between the lorry and a forklift used for the task, when the forklift surged forward, trapping his head between the forklift and the lorry, fatally injuring him.

Investigations showed that at the time of the incident, another worker, Worker C had agreed to assist Workers A and B by operating the forklift, although Worker C was not in possession of a valid forklift operator's license. As Worker C was untrained in operating forklifts, he would have no knowledge of

the controls of the forklift and its potential hazards. Upon starting the forklift's engine, the forklift surged forward as the gear of the forklift was left in the 'forward' setting and the handbrake was not engaged.

Investigations also showed that Worker B had operated the forklift prior to the accident when he was untrained in operating forklifts and not in possession of a valid forklift operator's license.

The employer at the workplace had failed to conduct an adequate risk assessment and establish a safe work procedure for the mounting of a toolbox to the underside of a lorry to be carried out. It had also failed to implement adequate control measures to ensure that only a licensed forklift operator operates the forklift at the factory.

The employer was charged under **s12(1)** read with **s20** of the Workplace Safety and Health (WSH) Act and was fined **$100,000** for its lapses that led to the death of the worker. For its offence, the employer could have been fined up t**o $500,000.**

Workers B and C were each charged with one count each under s **15(1)(b)** of the WSH Act and were fined **$80**0 each. For their offence, Workers B and C could have been fined up to **$1,000** each.

MODULE 02

REFRESH ON THE CORRECT INTERPRETATION ON LOAD CHART

SL NO	CONTENT
2.1	UNDERSTANDING AND HOW TO READ THE FORKLIFT LOAD PLATE
2.2	COMMON MISTAKES MADE BY OPERATORS WHEN READING A FORKLIFT LIFTING CAPACITY CHART
2.3	CASE EXAMPLE : UNSAFE USE OF FORKLIFT: WORKER STRUCK BY TOPPLED MACHINE
2.4	OPERATOR READING ERRORS THAT COULD POTENTIALLY LEAD TO ACCIDENTS WHEN READING A FORKLIFT LIFTING CAPACITY CHART

REFRESH ON THE CORRECT INTERPRETATION ON LOAD CHART

What Is A Forklift Load Plate?

A forklift load plate is a placard that is mounted on a forklift to offer important information regarding the forklift's setup, construction, and limitations. It comprises critical machine-specific statistics such as weight, fuel type, and overall load capability based on topography, load height, and forklift mast tilt.

2.1 Understanding and How to Read the Forklift Load Plate

Operating a forklift without proper training or working knowledge of this crucial piece of machinery can result in accidents and other negative repercussions.

The forklift load plate is an important safety mechanism for forklift operation. This plate carries vital information that informs forklift operators about the safe operating load restrictions applicable to their individual forklift. Forklift Operators must be aware of and understand how to interpret the load plate in order to operate the forklift safely within its operational limits.

HOW TO READ A FORKLIFT DATA PLATE?

- You can find your forklift identification and specifications on the Data plates.
- There are two locations where you can find these nameplates.
- Depending on the forklift brand, there may be variations in where the data-plates are located, or what information is displayed.

1. Front of forklift

Data plate is behind the mast .

2. Console near driver's seat

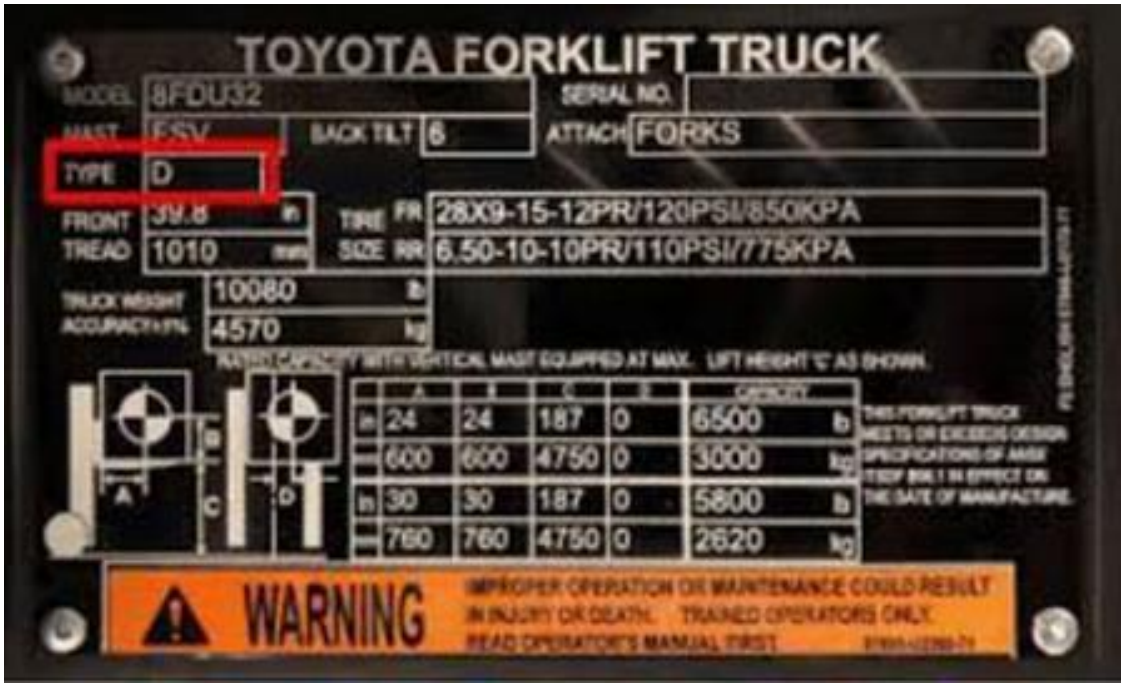
Nameplate is on the right hand side of the driver

What Type Of Information Is On A Forklift Load Plate?

A forklift data plate is a crucial safety aid. It's designed so that operators can easily and quickly learn information about the particular forklift they will be operating. While the specific data contained in the plate can vary across manufacturers, they typically contain the following:

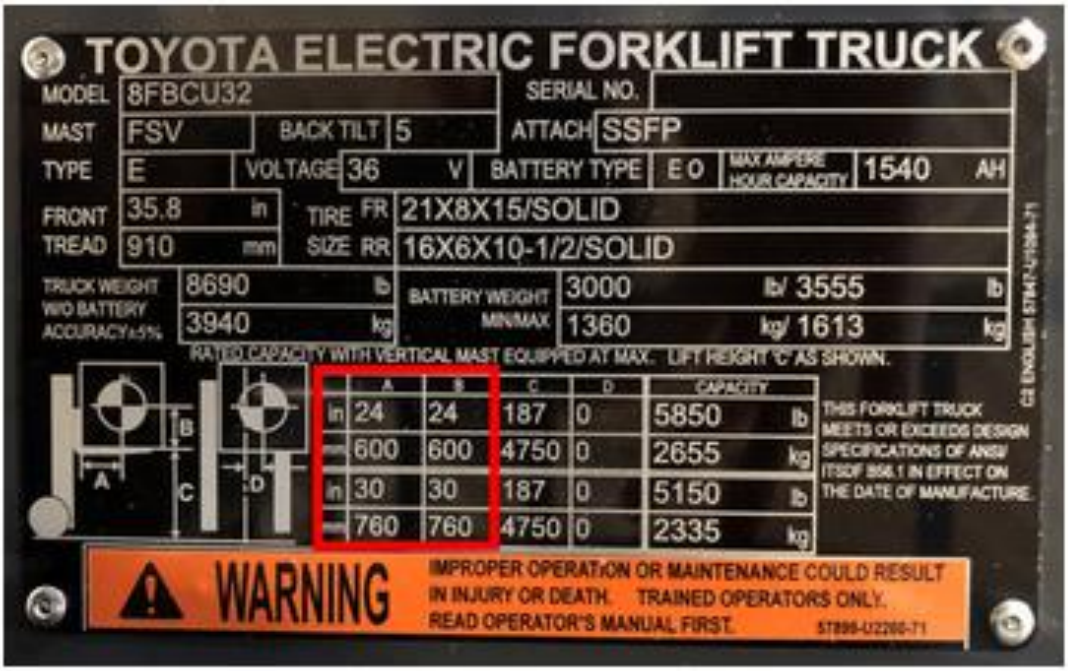
Type	Details
Model Number	Provides a good overall summary about a forklift's specifications including series, tyre type, fuel type, and lifting capacity. This number is important in communicating with dealers and repair personnel for technical assistance.
Serial Number	Forms a key component for any communication with technicians. It will enable a technician to narrow down technical information and match parts for any needed repairs.
Mast Type	Indicates the type of mast depending on the model (2-stage, 3-stage, or 4-stage).
Fuel Type	This indicates how a forklift is powered and can include electricity (E), liquid propane (LP), diesel (DS), gasoline (G), or compressed natural gas (CNG).
Tilting Angle	Lists the maximum angle in which a mast can tilt forward and backward. Is useful as depending on what materials are being carried, may require a higher tilt angle to ensure stable maneuverability and avoid any loss of loads.
Attachments	Lists what attachments if any have been added to the forklift. This data is necessary as any attachments will reduce lifting capacity affecting a forklift's overall capabilities.
Front Tread	Lists the measurement of the overall width of a forklift. It is the equivalent of a forklift's footprint and enables an operator to factor in the space required for operation in a workplace environment.
Tyre Size	Indicates both the type and size of the tyre a forklift uses. It's important to match the type of tyre to what the forklift has been designed to use. Common labels include Solid – Solid pneumatic tyres, Smooth or Treated – Cushion type tyres.
Truck Weight	Lists the overall weight of the truck, that is, how much the forklift weighs without a load.
Forklift Diagram	This provides several data points important for understanding the function of your rented forklift. This is designed to help you understand what the forklift can lift and how it maneuvers on your job-site.

Some examples of forklift load plates are shown below



Where Can You Find the Load Center of Your Forklift?

The forklift load center chart on your lift truck's manufacturer-provided data plate.



You can find the load center rating on your forklift's data plate

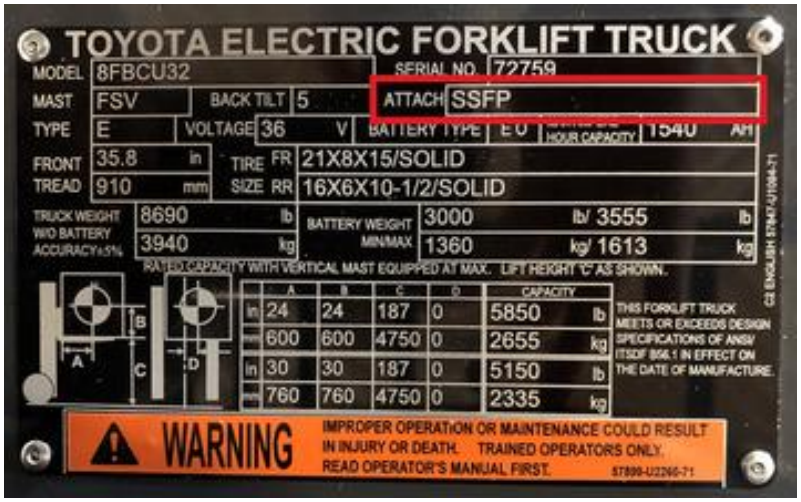
- That said, most forklifts are rated for a 24-inch load center.
- The reason for this is that most pallets are 48 inches in length.
- And, assuming that the goods on the pallet are evenly distributed, the load's center of gravity will be in the middle.
- Given that the middle of a 48-inch pallet is at the 24-inch point, this is the reason why

What Factors Can Increase the Load Center?

It's important to understand that any installed attachments, such as side shifter, fork positioned, and clamps, can increase the load center of a forklift.

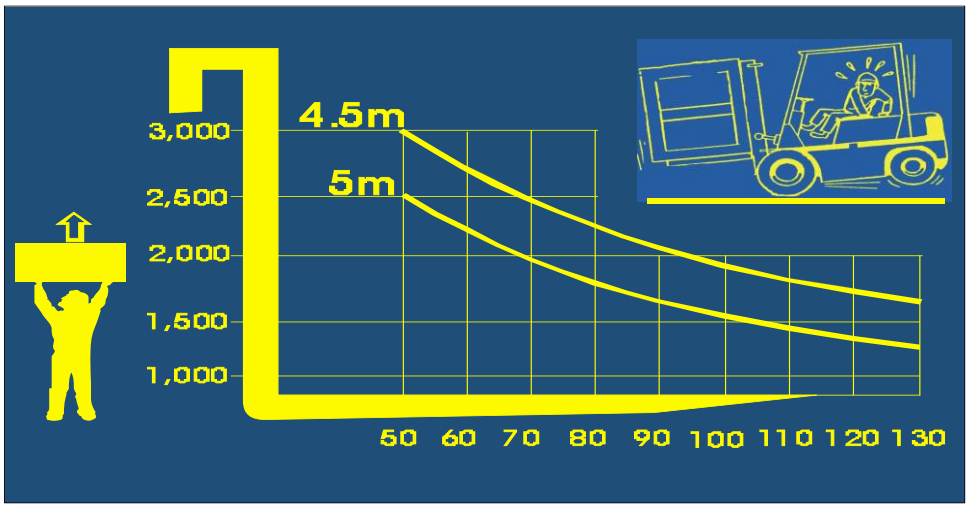
Because the thickness of a forklift attachment itself pushes the load out further than if there were just a pair of forks installed.

- In doing so, they enhance the load moment.
- This is why any forklift with an attachment must have a current data plate.
- The extra thickness of a forklift attachment increases the load center



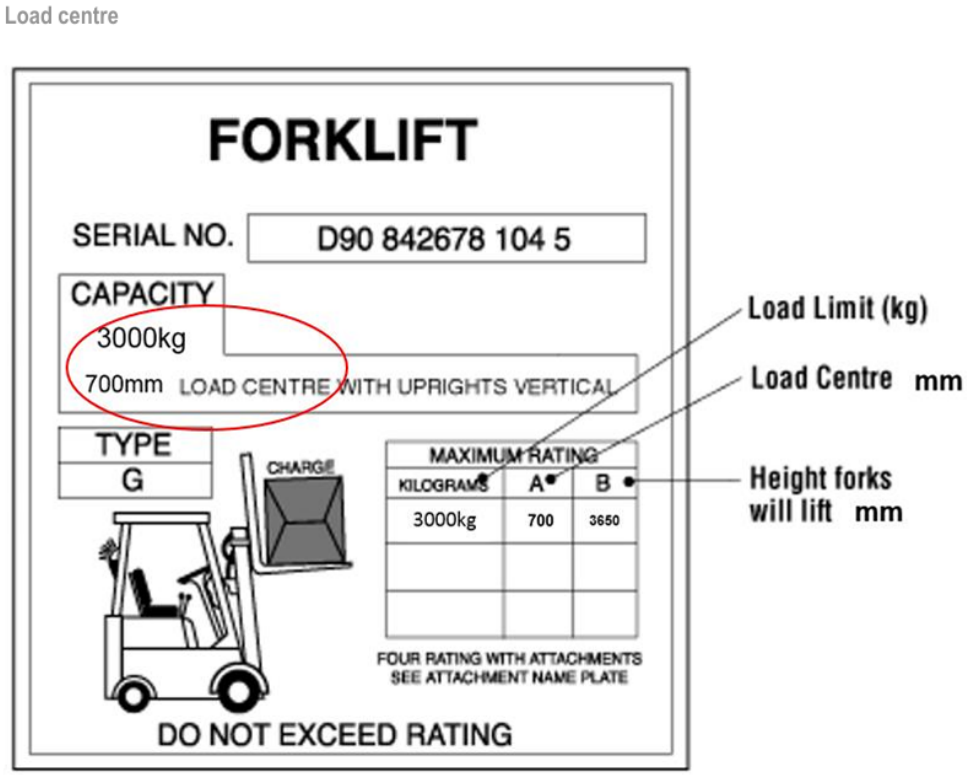
Forklifts with attachments installed must have an updated data tag showing so

In addition, the modified plate must list the attachment and include a new load center and lifting capacity rating.



LOAD CAPACITY CHART

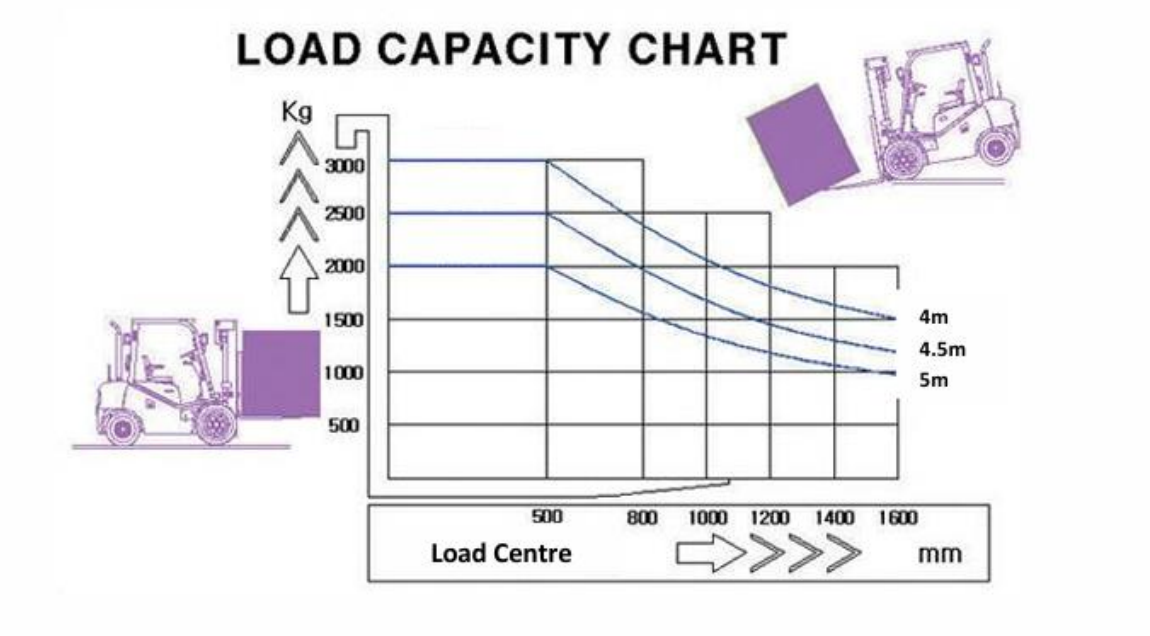
Forklift – Capacity / Load Chart :



An operator exceeds their forklift's rated maximum capacity, it can put their safety at risk. With the increasing complexity of modern material handling equipment, it is crucial for forklift operators to understand how to read a forklift load capacity chart and understand the influences that shift how much a forklift can lift at different heights.

A forklift's load capacity is defined as a specific weight at a specific load center. While your forklift may be rated to lift 6,000 pounds, that maximum capacity can be reduced based on the shape of the load you are moving. Objects with longer load centers cannot be as heavy as shorter objects due to the physics involved with forklift counterweights. The maximum capacity of a forklift is negatively affected by larger load centers, higher lifting heights, and added attachments to the forklift, as well as other factors.

Carry out Forklift Operations - Forklift Stability



The load chart above tells us that this forklift can lift approximately:

- **_____ kg to a height of 5m at a standard load centre of 800mm**
- **_____kg to a height of 4m at a standard load centre of 1000mm**
- **_____kg to a height of 4.5m at a standard load centre of 1400mm**

2.2 common mistakes made by operators

Here are common mistakes made by forklift operators when handling loads, particularly in relation to load carts:

Overloading the Cart:

- Exceeding the weight limit of the load cart, which can lead to tipping or loss of control.

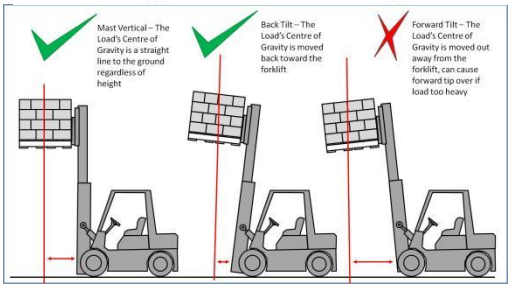
Improper Load Distribution:

- Unevenly distributing the load on the cart, causing instability and increasing the risk of tipping.

Failing to Secure Loads:

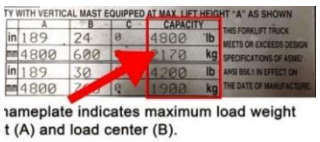
- Not using straps, nets, or other securing methods to keep loads stable during transport.

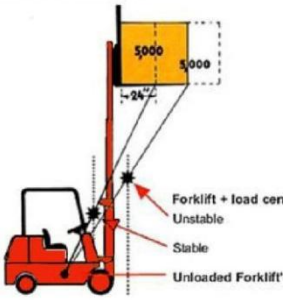
Ignoring Load Height Restrictions:



- Stacking loads too high, which can obstruct visibility and increase the risk of accidents.

Neglecting to Check Load Stability:





- Failing to assess whether the load is stable before moving, leading to potential shifting during transport.

Driving Too Fast with a Load:

- Speeding while transporting loads, increasing the risk of losing control or causing accidents.

Not Lowering the Load:

- Keeping the load elevated while driving, which can obstruct visibility and increase the risk of collisions.

Ignoring Pedestrian Safety:

- Failing to watch for pedestrians or not using designated pathways when transporting loads.

Neglecting to Communicate:

- Not signaling or communicating with other workers when moving loads, leading to misunderstandings and accidents.

Not Using the Right Equipment:

- Using a forklift or cart that is not suitable for the specific load type or weight.

2.3CASE EXAMPLE

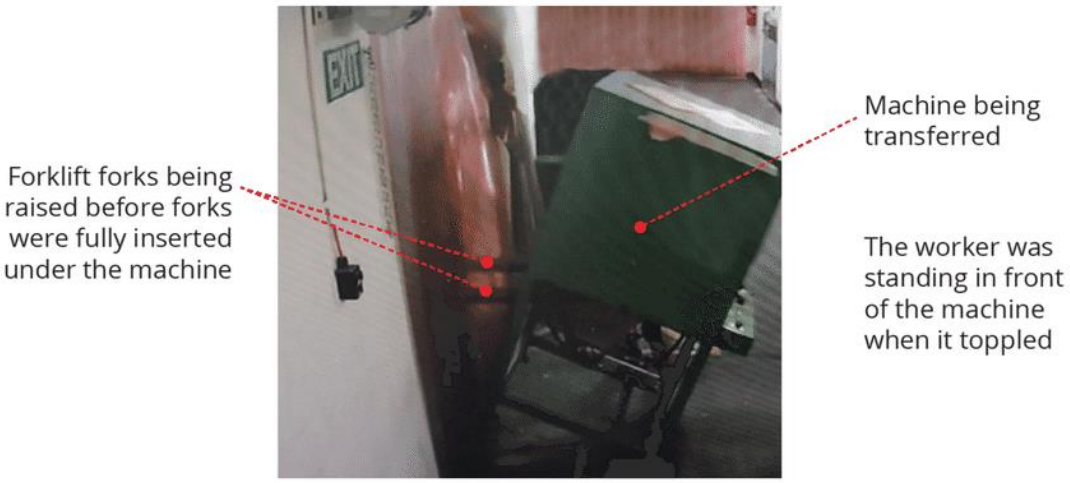
UNSAFE USE OF FORKLIFT: WORKER STRUCK BY TOPPLED MACHINE

On 27 December 2022, a worker was guiding a forklift to position its forks under a machine.However, the machine toppled onto the worker. He was sent to the hospital where he passed away.

Preliminary investigation revealed that the forks of the forklift were raised before they were fully inserted under the machine. The lifting of the partially-inserted forks caused the machine to topple

In 2022, there were six cases of forklift-related fatal workplace accidents. Two cases involved workers being crushed under forklifts that toppled from unbalanced loads, another two cases involved workers being run over or crushed by moving forklifts, and the remaining two, including this case, involved forklift forks toppling objects onto workers.

As forklift accidents can lead to serious injuries and death, the WSH Council calls on all companies using forklifts to undertake an urgent assessment of their safety measures in the use of forklift



What companies should do

Companies should urgently assess and ensure that their WSH management system includes the following measures or checks:

Competent forklift operator:

Allow only competent and authorised persons to operate forklifts.

Ensure all forklift operators have completed the necessary certifications such as the Singapore Workforce Skills Qualifications (WSQ) Operate Forklift Course. Require forklift operators to attend refresher training at least once every three years.

Safe Work Procedure (SWP):

Implement a SWP for moving heavy equipment/machines. Consult the manufacturer for advice on how specific equipment/machines can be moved safely.

Safe forking operation:

Instruct forklift operators to carry out the following when using forks to
pick up a load, and ensure that the operator has a clear view of the lifting operation:

- Check that the spread of the forks is suitable for the width of the load.
- Insert the forks under the load fully or as far as possible.
- Raise the forks slightly to check that the load is stable on the forks.
- Tilt back the forks slightly to prevent slippage before moving off with the load.

Wherever possible, loads ought to be placed on pallets as pallets enable safer load handling. Loads that may topple or fall and endanger a worker must be properly secured onto the pallet before being moved

Safe work zone:

Require forklift operators to confirm all workers are in a safe position before starting operations. When picking up a load, the operator must only raise the forks when there is no one in the danger zone# should the load topple. Authorize operators to stop forklift operations once anyone comes into an unsafe position **# "danger zone": refers to an area where one can get injured**

Hazard communication and work supervision:

Communicate to workers the possible on-site hazards and risk controls in place before allowing forklift operations to begin. Deploy a supervisor to oversee operations and ensure that the work is carried out as per SWP.

2.4 Operator reading errors that could potentially lead to accidents when reading a forklift lifting capacity chart:

1. Misinterpreting Load Ratings:
Operators may confuse the maximum lifting capacity with the safe working load, leading to overloading.

2. **Ignoring Load Center:**
Failing to consider the load center measurement can result in exceeding the capacity. Operators should ensure loads are positioned at the correct center of gravity.

3. Neglecting Attachment Weight:
Operators often overlook the weight of attachments (e.g., forks, clamps) that can reduce the forklift's overall lifting capacity.

4. **Not Adjusting for Load Type:**
Different types of loads may require adjustments to the lifting capacity. For example, unstable or uneven loads may reduce the effective capacity.

5. Failing to Verify Chart Accuracy:
Relying on outdated or incorrect capacity charts can lead to unsafe operations. Operators should always ensure they are using the most current information.

6. **Not Using the Chart Properly:**
Misunderstanding how to read the chart (e.g., reading the wrong row or column) can lead to incorrect capacity assessments.

MODULE 03:

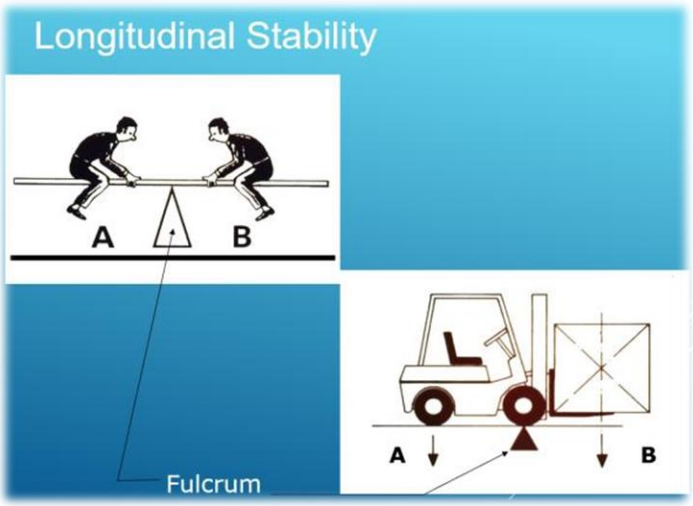
FORKLIFT STABILITY

SL NO	CONTENT
3.1.	THE FULCRUM POINT ON FORKLIFT | FORKLIFTS FULCRUM PRINCIPLE
3.2.	FACTORS AFFECTING THE STABILITY OF FORKLIFT OPERATIONS.
3.3.	FORKLIFT STABILITY-LOAD CENTRE
3.4.	FORKLIFT TIP-OVER
3.5.	COMMON CAUSE OF INSTABILITY FORKLIFT OPERATION

FORKLIFT STABILITY

3.1. The Fulcrum Point On Forklift | Forklifts Fulcrum Principle

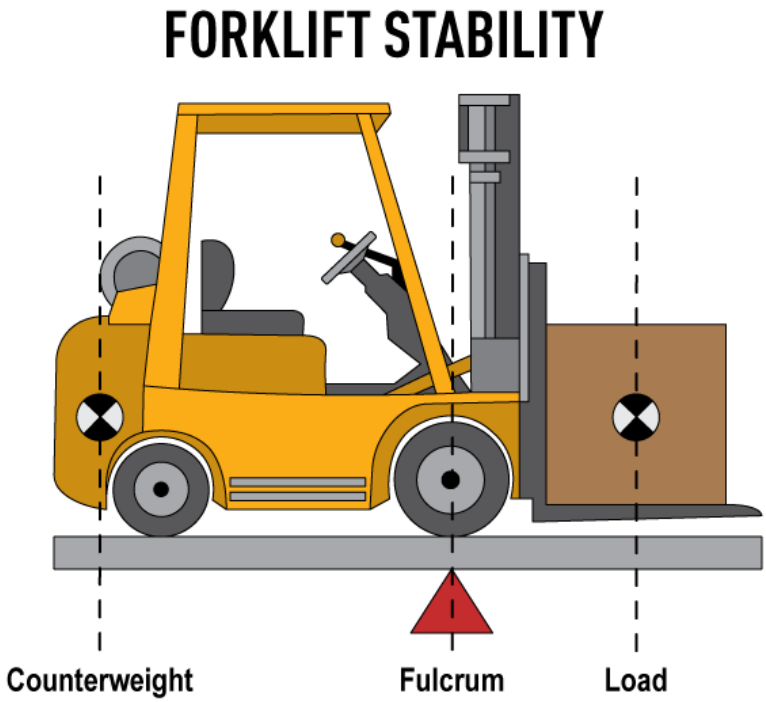
The forklift's stability relies heavily on this point as it is the dividing line between the machine's weight and the load's weight.



When the forklift is in operation, the counterweight should exert more force than the load to prevent the forklift from tipping forward. The fulcrum point is crucial in maintaining this balance

3.2. Factors affecting the stability of forklift operations.

Forklift Stability



THE BASICS OF STABILITY

UNDERSTAND LIFT TRUCK STABILITY

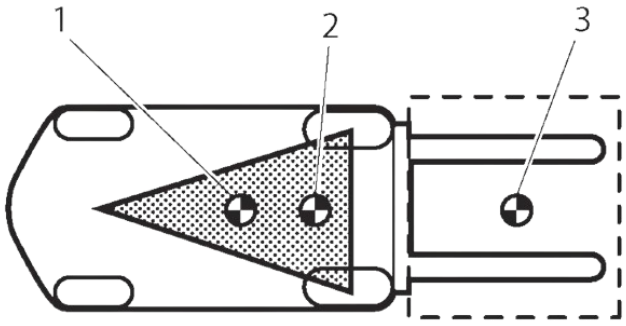
Counterbalanced lift truck design is based on the balance of two weights on opposite sides of a fulcrum (the front axle).

The load on the forks must be balanced by the weight of the lift truck. The location of the centre of gravity of both the lift truck and the load is also a factor.

This basic principle is used for picking up a load. The ability of the lift truck to handle a load is discussed in terms of centre of gravity and both forward and sideways stabilities.

DETERMINING STABILITY AND THE CENTER OF GRAVITY

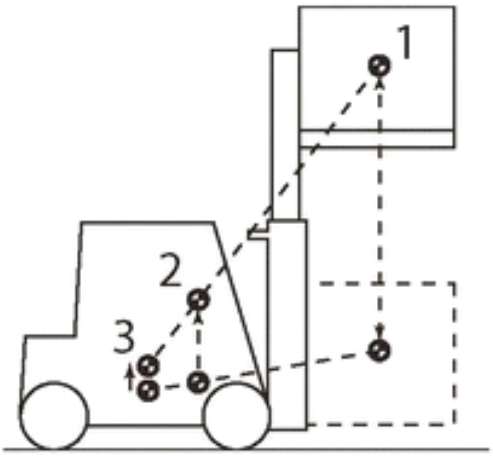
The stability of the lift truck is determined by the location of its Centre of gravity, or if the lift truck is loaded, the combined gravity.



1. **CENTER OF GRAVITY - LIFT TRUCK**
2. **COMBINED CENTER OF GRAVITY**
3. **CENTER OF GRAVITY - LOAD**

FACTORS IMPACTING STABILITY AND CENTER OF GRAVITY

Because an empty lift truck has the ability to tip-over sideways more easily than a lift truck carrying a load in the lowered position, these factors should be considered when the lift truck is unloaded



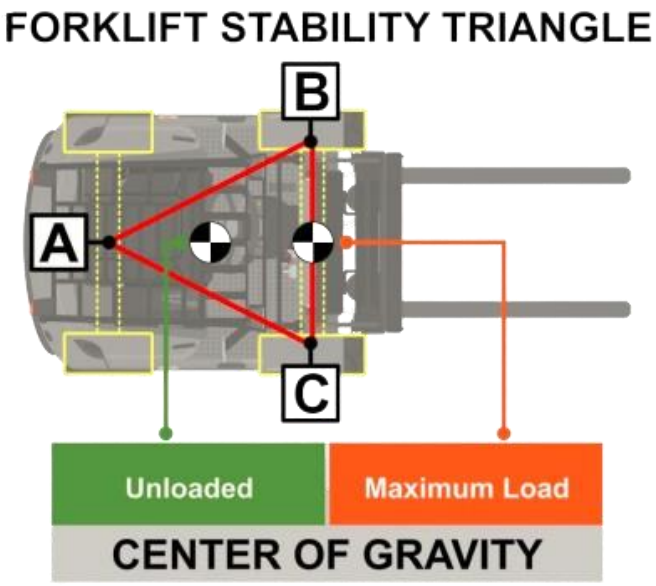
1. **CENTER OF GRAVITY - LOAD**
2. **COMBINED CENTER OF GRAVITY**
3. **CENTER OF GRAVITY - LIFT TRUCK**

Most forklifts have a three-point suspension system. The three points are the two front wheels and the pivot point of the rear axle.Connect the three points, and you have what's called the stability triangle. One major difference between a forklift and a car is stability.

FORKLIFT STABILITY TRIANGLE

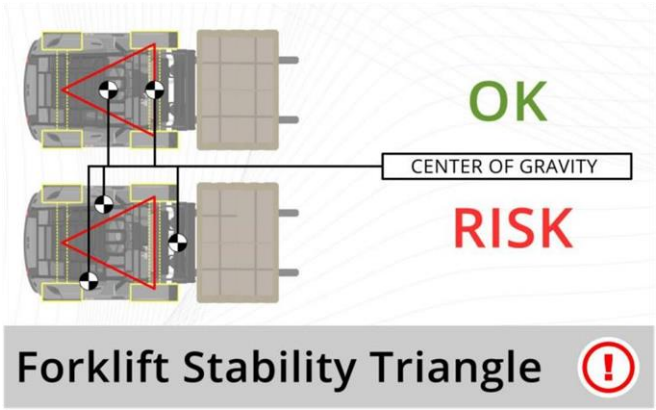
What is the forklift stability triangle?

The stability triangle is an imaginary 3D pyramid between the center of the forklift's rear axle and both wheels of the front axle. The front wheels of a lift truck serve as the fulcrum. Put another way, the pivot point on a counterbalance truck is the axle of the front wheels.



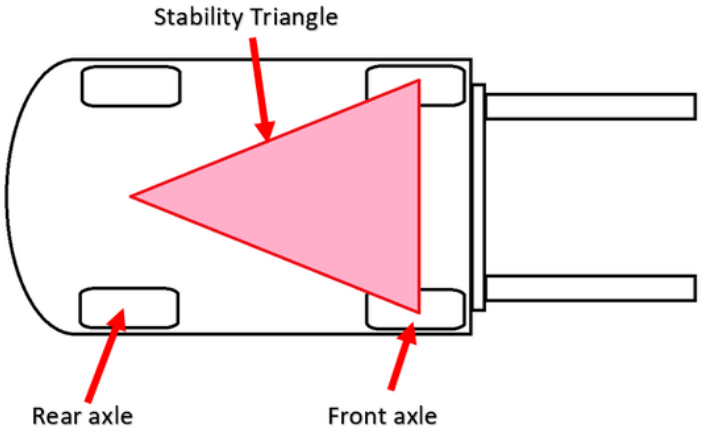
The forklift stability triangle is an invisible triangle formed by the pivot point on the rear axle and the two front wheels joined by the front axle.

If the combined center of gravity of the load & forklift is within this stability triangle, the forklift truck will not tip over

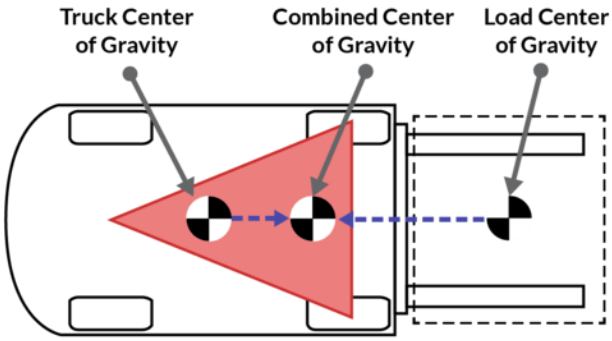


The **"stability triangle"** refers to an imaginary zone in a forklift between the front and rear axles and where the combined center of gravity must remain to keep the forklift stable

When unloaded, the center of gravity of the forklift is within the confines of the stability triangle



- If it moves completely outside the triangle, the forklift will be unstable and liable to tip. Likewise, when lifting a load, the center of gravity also shifts upward.

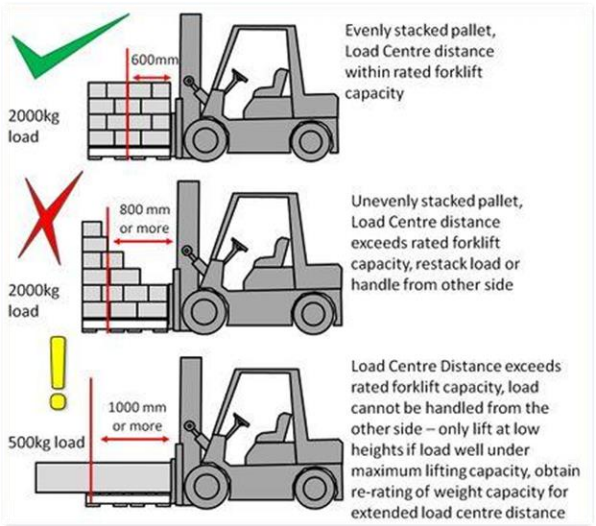


- The higher you lift the load, the less room the center of gravity has to stay within the stability zone

The center of gravity on a loaded forklift shifts toward the front axle

3.3. Forklift Stability-Load centre

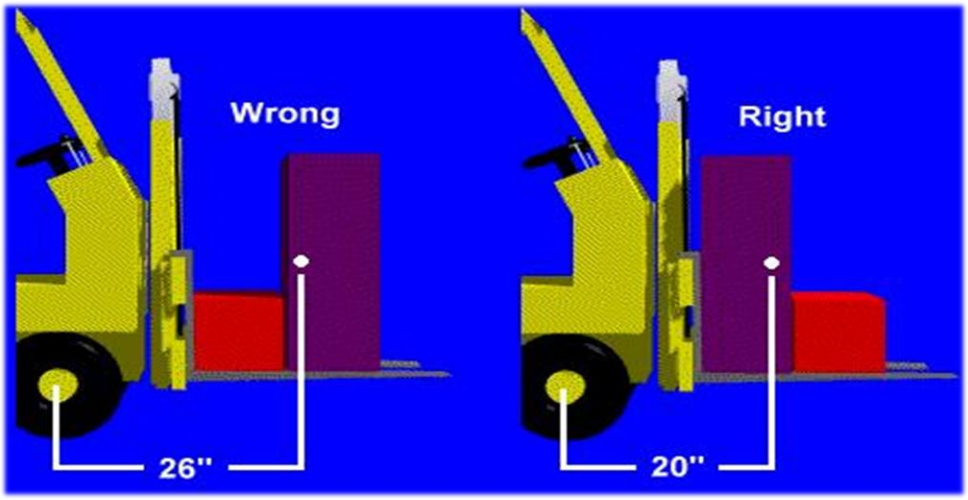
- The load center is the distance point from the centre of the load where it will be evenly balanced till the face of the backrest when the fork is tilted.
- When a forklift is loaded properly, it becomes more stable. However, improper loading, such as loading the forklift beyond its capacity, or loading an oversize or wide load without adjusting the weight, will cause the forklift to tip over
- Load weight, weight distribution, size, shape, and position are key factors affecting the stability of the forklift . Forklifts are designed to carry a capacity load at a standard load center.



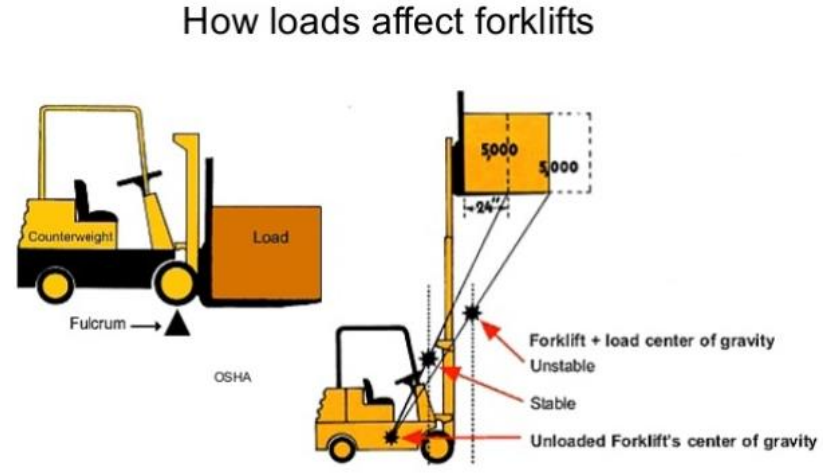
Notice that in diagram, the load center (70cm) is longer and farther away from the front wheels due to the wrong arrangement of the load. Thus, during transportation, it will fall off or even tip forward .

Rearrange the load while lifting loads before moving. Place the heaviest load against the back of the forks as in diagram

Placing the heaviest loads near the back of the forks will make the load center smaller / closer (40cm) to the front wheels and that will make the load more stable during transportation.



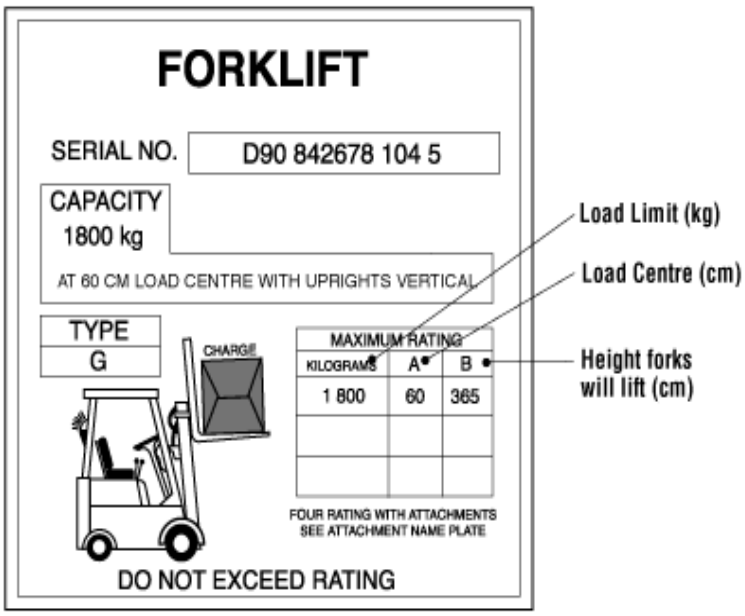
- The higher you raise the load, the more the center of gravity shifts. And once it moves outside what's called the “stability triangle, ” you risk tipping the truck over. Keeping the load lower helps keep the center of gravity within the zone of stability.
- Use the proper lift fixture or attachment for special loads (such as drum grappler).
- Position the load according to the recommended load centre. The load limit of the lift truck decreases as the load centre is raised.
- Do not add extra weight to counterbalance an overload.



A forklift balances a load with a counterweight at the back. The front wheels act as a fulcrum or balance point. The center of gravity moves upward when the forks are raised.

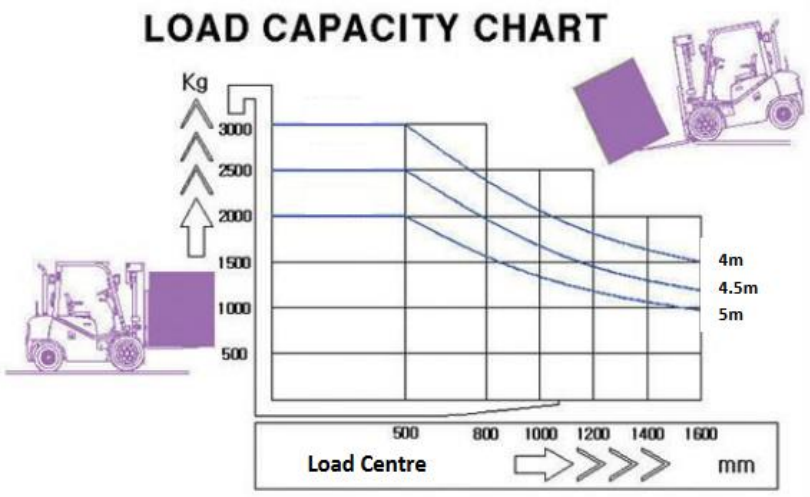
Forklift's load capacity:

A forklift's load capacity is defined as a specific weight at a specific load center. While your forklift may be rated to lift 6,000 pounds, that maximum capacity can be reduced based on the shape of the load you are moving. Objects with longer load centers cannot be as heavy as shorter objects due to the physics involved with forklift counterweights. The maximum capacity of a forklift is negatively affected by larger load centers, higher lifting heights, and added attachments to the forklift, as well as other factors.



Carry out Forklift Operations - Forklift Stability

- Far left side of chart: = Weight's in kilograms (Kg).
- Along the bottom of chart: = Load centres in millimetre's (mm).
- Far right side of chart: = Lift height in meters (m).

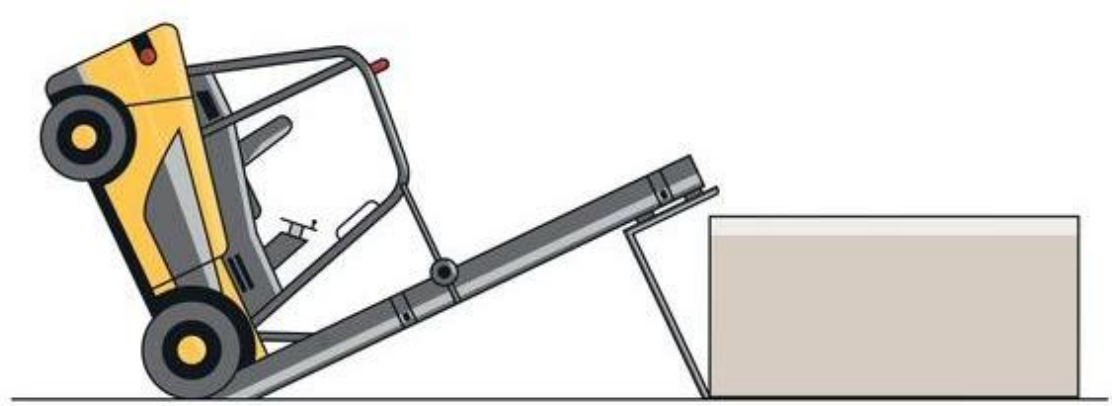


3.4 Forklift tip-over

Forklift tip-overs can occur in 2 ways:

- Longitudinal tip-overs
- Lateral tip-overs

Longitudinal Forklift Tip-Overs



A longitudinal forklift tip-over is when the lift truck tips forward or backward

Longitudinal tip-overs occur when a forklift rolls forward or backward.

A longitudinal forklift tip-over is typically caused by:

- Overloading.
- Improper load positioning on slopes.
- Carrying a load with the mast tilted forward.
- Abrupt acceleration or braking, especially when carrying heavy loads.

Proper load distribution, smooth acceleration/deceleration, and maintaining a safe distance from obstacles are essential to prevent forklifts from tipping over forward or backward.

Lateral Forklift Tip-Overs

A lateral forklift tip-over is when the lift truck tips on its side

often, lateral tip-over forklift occurs when under the following circumstances:

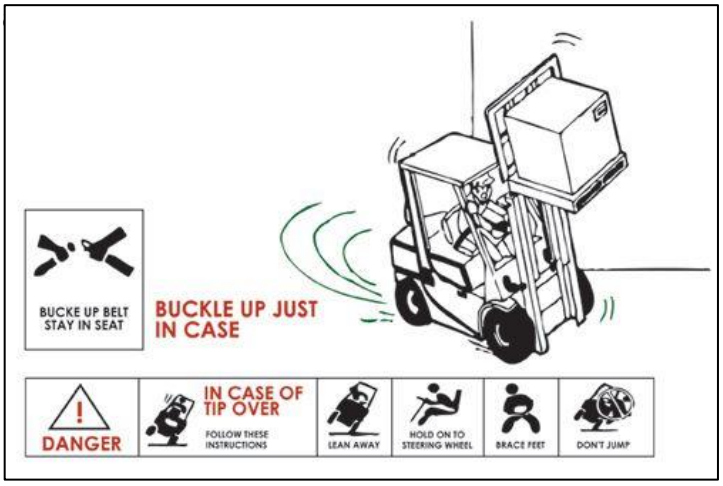
- Turning too abruptly.
- Turning at high speeds.
- Carrying an unbalanced load.
- Traveling on uneven surfaces.
- Encountering obstacles that cause the forklift to become unstable.

It is crucial to maintain proper load positioning and drive at controlled speeds to minimize the risk of lateral tip-overs.

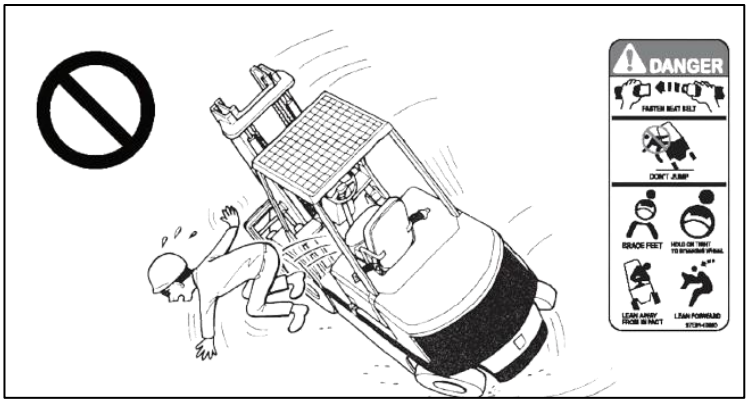
Do's and Don't s to avoid forklift tip-over

Fasten the seat belt

The seat belt will keep you from being thrown out of the lift truck in a tip-over. The seat belt is used to protect your head and torso from being trapped between the lift truck and the ground. While it may not protect the forklift operator against all possible injury, it can help

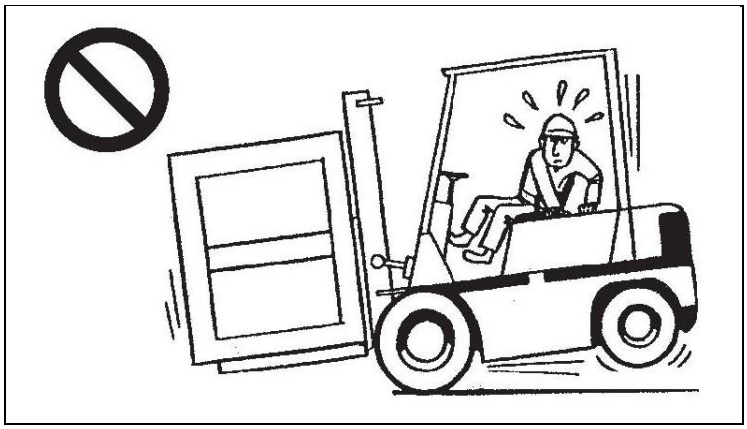


Do not jump off your lift truck if it starts to tip over



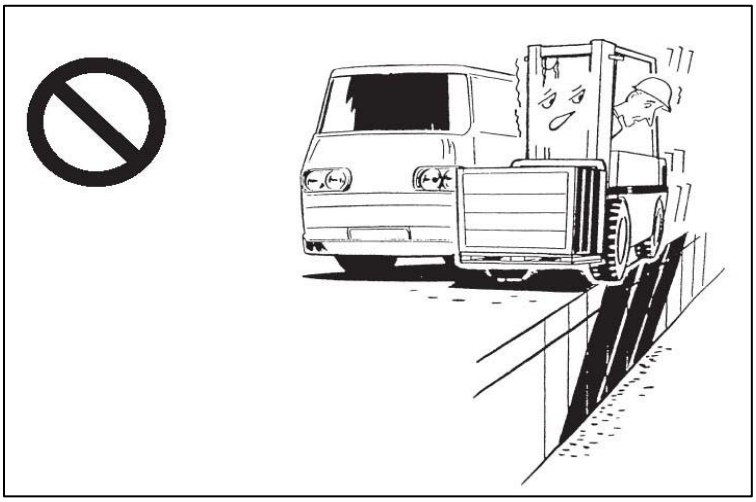
The forklift operator must stay in the operator seat, hold on firmly and lean away from the point of impact to reduce the risk of serious injury or death.

Do not overload



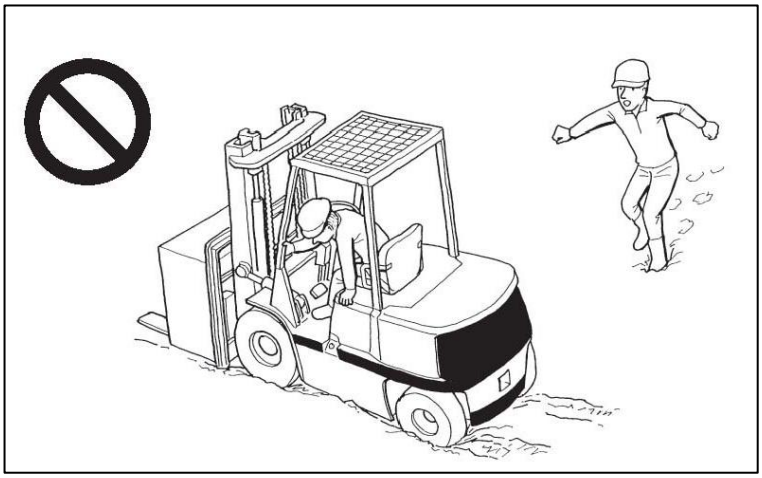
Handle loads only within the capacity shown on the capacity plate.

Watch "tail swing



Always maintain a safe distance from the edge of docks, ramps, and platforms. The lift truck while turning the tail of forklift will swing and hit anything causing serious injury or damage to property.

Check floor loadings limit



Avoid fast starts, turns and sudden stops

These movements could cause the lift truck to tip over or skid.

3.5 Common causes for Instability forklift operations:

Improper Load Handling and Overloading

Incorrectly handling loads is a key cause of forklift tip-overs. Overloading the forklift or carrying a load beyond the recommended load ratings can make the forklift imbalanced and unstable. Also, improperly positioned loads can shift the center of gravity and destabilize the forklift.

Accelerating or Braking Too Quickly

Slamming on the accelerator or brakes can shift the forklift's center of gravity outside the stability triangle. This can result in instability and increase the risk of tipping over. Instead, start smoothly and brake gradually until coming to a soft stop.

Excessive Speed

Operating at high forklift speeds increases the risk of tip-overs due to possible loss of stability, sudden changes in direction, or abrupt stops. Forklift operators are advised to drive at a safe and controlled speed, particularly when carrying loads to prevent any occurrence of having a forklift flipped over.

Turning Too Quickly

Weight shifts from turning too sharply at high speeds can also cause lateral forklift tip-overs. The centrifugal force generated during a fast turn can shift the forklift's center of gravity, leading to instability.

Inadequate Forklift Maintenance

Poorly maintained forklifts can contribute to tip-overs. This can be due to issues with parts like brakes, tires, steering, or hydraulic systems that can affect the forklift's stability and increase the risk of accidents. Regular maintenance and inspections are crucial to identify and address any potential issues promptly.

Inadequate Forklift Operator Training

Insufficient forklift operator training is a common cause of forklift accidents, including tip-overs. Lack of knowledge about load capacity limits, safe operating practices, and proper load handling techniques can lead to forklift instability and tip-overs.

MODULE 04:

PRE-OPERATION AND POST OPERATION CHECKS ON A FORKLIFT

SL NO	CONTENT
4.1	PRE-OPERATION CHECKS
4.2	POST-OPERATION CHECKS
4.3	SAFETY PRECAUTIONS
4.4	THE REASONS FOR OPERATORS FAILING TO CARRY OUT THE INSPECTIONS THAT COULD LEAD TO SERIOUS ACCIDENTS

PRE-OPERATION AND POST OPERATION CHECK ON FORKLIFT

4.1. Pre-Operation Checks

4.2. Post-Operation Checks

4.3. Safety Precautions

4.4. The reasons for operators failing to carry out the inspections that could lead to serious accidents

4.1. Pre-Operation Checks:

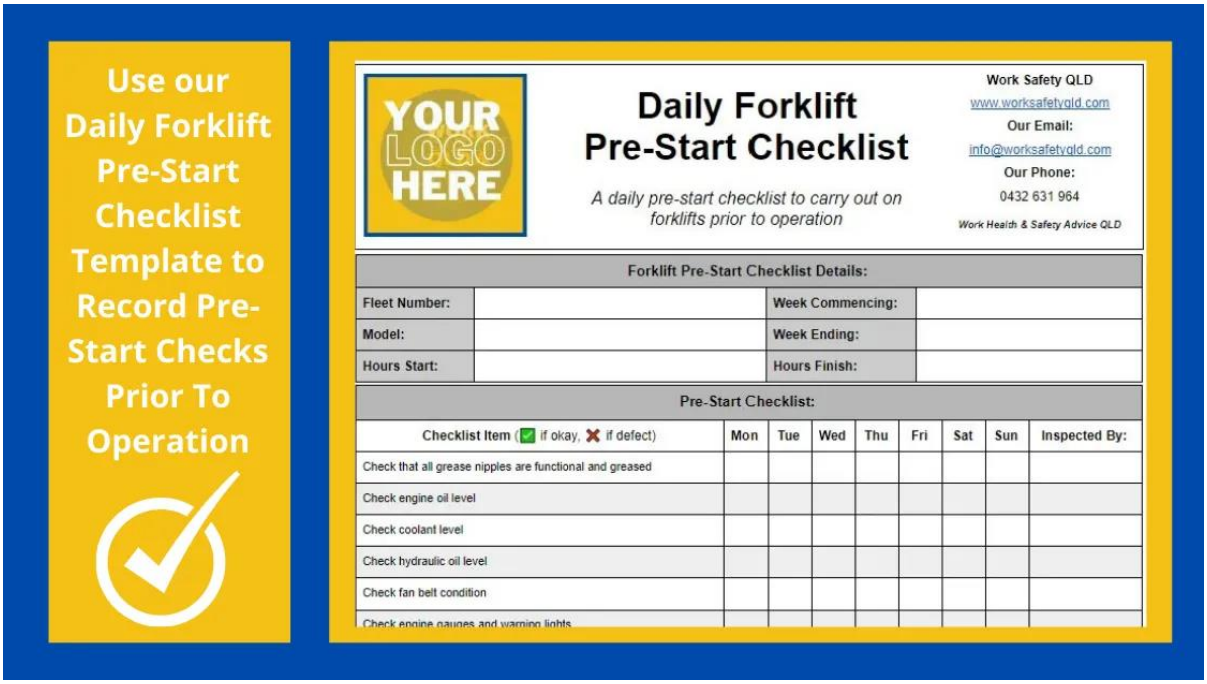
Perform the pre-operational checks using a checklist. Perform (External, Internal & Functional Checks)

Include details of damage parts, faults, missing parts, not in good working condition, e.g., dented, rusty etc onto the remark's column for follow up action.

Place a sign to inform others not to use it.

Inform the supervisor & arrange for certified mechanic to repair the forklift

- Tyres (check for wear, splitting and cuts)
- Condition of the lights and mirrors.
- Condition of the gauges.
- Obvious signs of damage to the body and overhead guards.
- Obvious signs of damage to the mast, lifting assembly and attachments.
- Forklift tyres and backrest for cracks and fractures.
- Check wheels for damage, especially to the rims, and check that wheel nuts are tight. Seat and Seat Belt.
- Check that the seat is correctly fixed to the truck and not loose or damaged.
- Check that the seat belt or other restraint is properly



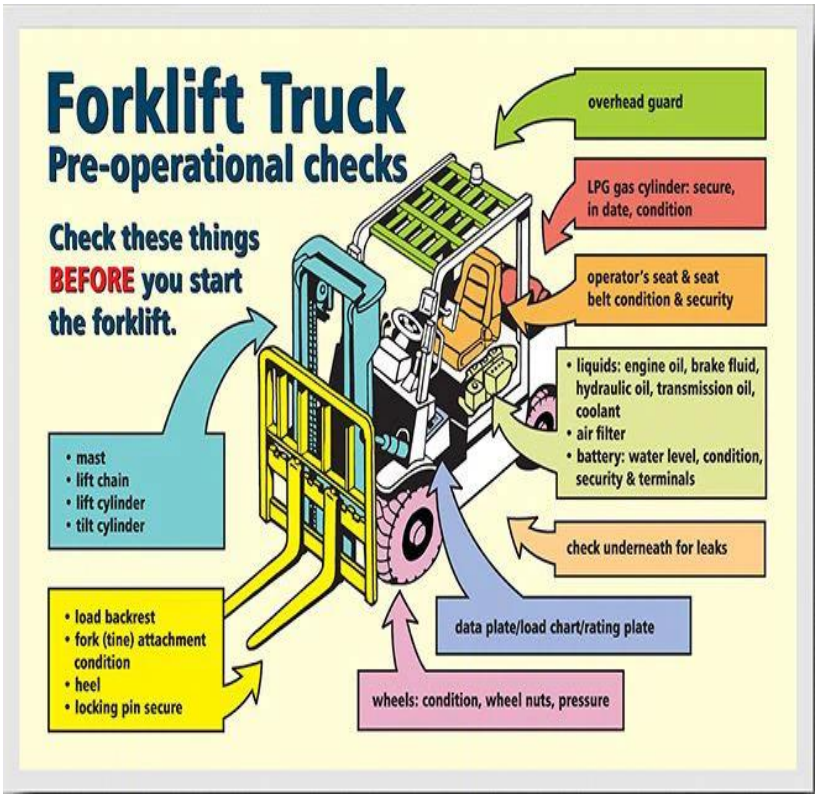
Conduct pre checks using a check list following a logical sequential sequence movement to prevent items not checked

Daily safety checks keep forklift in good working condition. It helps identify defects before the time, ensuring no more excessive wear and tear of a component of a forklift. Also, a routine inspection makes it easy to maintain a forklift and enhances its longevity.

It is the duty of the user to perform daily checks prior to the use of the forklift. Supervisor are to ensure that the routine checks are carried out regularly in an orderly and safe manner and report any discrepancies if any.

Place a breakdown sign to let others know of its condition.

Any malfunctions, damages or faults found are to be reported accordingly to organizational procedures.



1. **Visual Inspection**:

Examine the forklift for any visible damage or leaks

- **Frame and Forks:** Look for damage like cracks or bends
- **Tires:** Check for wear, damage, and proper inflation.
- **Hydraulics:** Inspect for leaks and damaged hoses.
- **Engine/Battery:** Look for leaks or corrosion.
- **Lights/Indicators:** Ensure they are working.
- **Safety Equipment:** Confirm seatbelt and fire extinguisher are functional.

2. **Fluid Levels:**

Check hydraulic fluid, engine oil, and fuel to ensure they are at appropriate levels. Forklift hydraulic fluid is needed in order for your machinery to function. Hydraulic systems are responsible for the forklift's lifting and steering capabilities.

Here are the steps for performing a forklift hydraulic oil change:

- Park your forklift on level ground.
- Lower the forks to the ground.
- Set the parking brake and turn the ignition off.
- Open the hood and find the forklift hydraulic fluid reservoir.
- Remove the vented cap and add oil to the fill tube. Pump forklift hydraulic oil into the reservoir.
- Keep an eye on the gauge as you fill. Once the forklift hydraulic fluid reaches the max line, stop pumping.
- Slowly remove the pump's nozzle and clean up any spills.
- Put on a new vented cap. Tighten it and close the lid.

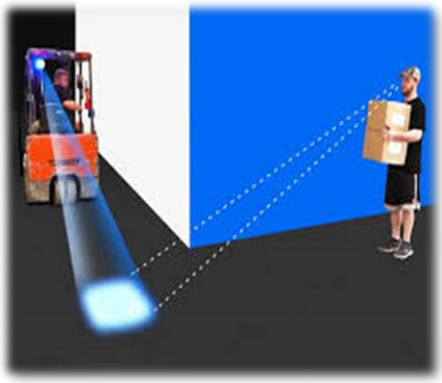
3. **Battery (Electric Forklifts):**

Ensure the battery is adequately charged and connections are secure.

4. Tyres:

Check for wear, damage, and proper inflation.
A solid tyre or an airless tyre. It is not filled with air but is manufactured using layers of rubber that are constructed around a metal frame or a wheel structure that can be mounted to a specific vehicle. Pneumatic tire forklifts have greater ground clearance than cushion tire trucks, so you can move around a lot better over gravel and other rough surfaces. A rough terrain forklift tyre, featuring high tensile creel bead wires to ensure ideal wheel fitment for maximum comfort and stability during operations.

5. Lights and Indicators:



Test all lights and alarms to ensure they are operational.

Blue Safety Lights

A backup alarm sounds off as the forklift is reversing. It alerts people there is forklift movements thus preventing a collision in advance. Pairing this with horns and good driving can increase safety.

Head Lights

Used when working indoors & when visibility is affected due to lack of light

Combination Lights

Combination lights comes with a fusion of the reverse light, brake light & the signal light

6. **Controls**:

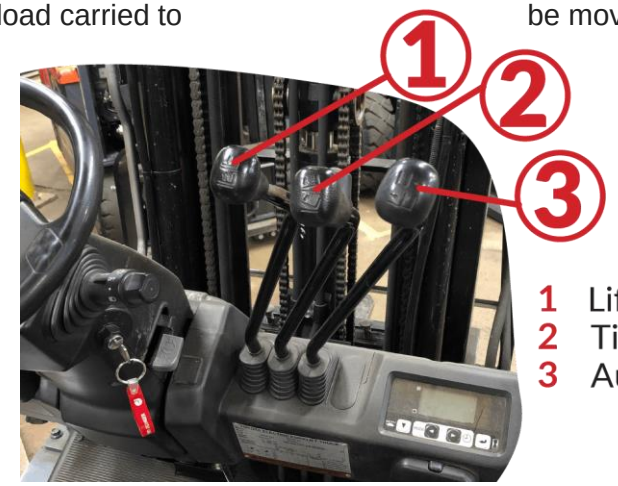
Verify that all controls (steering, lift, tilt) and brakes function correctly.

There are three forklift directional gear selector controls: drive, park, and reverse. Directional controls are mounted next to steering column.

Hydraulic lift controls is used to raise and lower the forks

The tilt lever is used to tilt the mast forward and backward. Push forward to tilt forward, pull backward to tilt backward.

The side shift is a mechanism within a forklift truck, controlled by the driver, that allows the load carried to be moved to the left and the right.

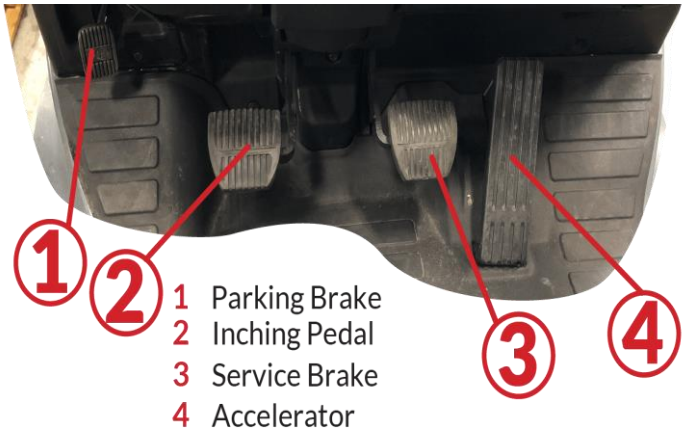


1 Lift & Lower
2 Tilt
3 Auxiliary (Sideshift)

Parking brakes are completely mechanical and use only cables and levers to operate. When a parking brake lever is pulled (or when a parking brake pedal is pushed), these cables transmit the necessary force to keep your vehicle in place or to stop the vehicle

The service brake pedal is the main brake pedal that, when pressed, will slow down and stop the forklift firmly and it lightens up the brake lamp to indicate that the forklift has stopped.

The accelerator pedal is located on the floor on the far-right, for movement. When the pedal is depressed, it picks up speed and moves on. When it pedal is released the machine stops



1 Parking Brake
2 Inching Pedal
3 Service Brake
4 Accelerator

The forklift steering knob features an ergonomic handle which provides the operator with effortless steering of the forklift.

7. **Safety Equipment:**

Ensure seatbelt and fire extinguisher are present and functional.

Forklift safety belts are designed to prevent drivers from jumping out of the truck if it tips over. Many injuries and fatalities occur when they are not used

8. **Load Capacity:**

Confirm the forklift's load capacity meets the job requirements.

Sometimes referred to as a capacity plate or a forklift nameplate, the forklift data plate includes important information such as weight, fuel type, and forklift load capacity. Associates need to read the data plate during training and before use to help build the culture of safety in your facility.

Always be Attentive – Care for your Forklift

- Checking the engine for any unusual sounds and leaks.
- Look out for smoke (black smoke normal, white smoke engine burn)
- Making sure that the seat belt is not damaged.
- Lights, horns and brakes, are functional
- Forward and reverse are functioning smoothly and properly.
- Up, down, left, right mast cylinders are functioning smoothly and properly.
- Loud grinding sounds might be in relation to worn-out gears or other components.
- Check for squeaking tires which may be a bad wheel bearing or a worn-out tire tread.
- Cracking or balding of the tires are both visible signs that it's time to get those wheels replaced as soon as possible.
- Check for squeaking tires which may be a bad wheel bearing or a worn-out tire tread.

Sample Checklist

SAMPLE CHECKLIST FOR PRE-OPERATION OF FORKLIFTS

This checklist provides the basic requirements for pre-operation of forklifts. Should a "No" be recorded for any of the below checklist items, state the condition(s) and its respective corrective actions in the "Remarks" column. This checklist is non-exhaustive and users are recommended to make the necessary customisation to suit your work processes and conditions at the workplace.

S/N	Items		Remarks
A. Fluid Level			
1	The following fluid level is within manufacturers' specifications:	☐ Yes ☐ No	
	(a) Battery water level;	☐ Yes ☐ No	
	(b) Fuel level;	☐ Yes ☐ No	
	(c) Engine oil level;	☐ Yes ☐ No	
	(d) Radiator water level;	☐ Yes ☐ No	
	(e) Transmission oil level;	☐ Yes ☐ No	
	(f) Hydraulic fluid level; and	☐ Yes ☐ No	
	(g) Brake fluid level.	☐ Yes ☐ No	
B. Lights			
2	The following lights are in good working condition:	☐ Yes ☐ No	
	(a) Headlights (high beam)	☐ Yes ☐ No	
	(b) Reverse indicator	☐ Yes ☐ No	
	(c) Brake indicator	☐ Yes ☐ No	
	(d) Hazard lights	☐ Yes ☐ No	
C. Adjustments to suit operator's view			
3	The following adjustments are made to suit the operator's view:	☐ Yes ☐ No	
	(a) Driver seat	☐ Yes ☐ No	
	(b) Rear view mirror	☐ Yes ☐ No	
E. Brakes			
4	Foot brake is able to hold and stop the forklift smoothly.	☐ Yes ☐ No	
5	Parking brake is able to hold the forklift when parked.	☐ Yes ☐ No	
D. Tyres			
6	Tyres are inflated and free of excessive wear or damage.	☐ Yes ☐ No	

7	Tyre nuts are tight.	☐ Yes ☐ No	
8	Tyres have adequate thread.	☐ Yes ☐ No	
B. Lift or lower system			
9	Controls of the lift or lower system are able to move freely.	☐ Yes ☐ No	
10	Lift or lower system is able to return to neutral when released.	☐ Yes ☐ No	
F. Others			
11	The battery connecting terminals are tight and free of exterior defects.	☐ Yes ☐ No	
12	Battery covers and guarding over other hazardous parts are in place and secured.	☐ Yes ☐ No	
13	There are no visible signs of leakage (e.g., oil, water).	☐ Yes ☐ No	
14	Operator's seat is free of visible defects.	☐ Yes ☐ No	
15	Ensure the following is in good working condition:	☐ Yes ☐ No	
	(a) Rear view mirror	☐ Yes ☐ No	
	(b) Seat belt	☐ Yes ☐ No	
	(c) Mast or forks	☐ Yes ☐ No	
	(d) Fan belt	☐ Yes ☐ No	
	(e) Lifting chain	☐ Yes ☐ No	
	(f)Lifting hose	☐ Yes ☐ No	
	(g) Limit switches	☐ Yes ☐ No	
	(h) Hour meter gauge and other gauges on the instrument panel	☐ Yes ☐ No	
	(i) Battery charge or discharge indicator	☐ Yes ☐ No	
	(j) Horn	☐ Yes ☐ No	
	(k) Hydraulic control lever	☐ Yes ☐ No	
	(l) Reverse warning buzzer	☐ Yes ☐ No	
	(m) Backup alarm	☐ Yes ☐ No	

4.2 Post-Operation Checks

1.Clean-Up: Clear the area around the forklift and lower the forks to the ground.

2. Shutdown Procedures: Turn off the engine, remove the key, and handle the battery (for electric forklifts).

3. Inspect for Issues: Check for any new damage or fluid level changes.

4. Record Keeping: Log any problems or maintenance performed.

5. Parking: Park the forklift in a designated, secure area.

- Park the forklift at a safe and designated area
- Stop the forklift and apply the handbrake
- Place the gear to neutral position
- Lower the fork to the ground

- Use the tilt lever to tilt towards the ground
- Check the tyres are straight
- Turn the keys to off the engine
- Unfasten the seat belt, and come down using the 3-point contact
- Look around for any visual damage or defects
- Handover keys to supervisor to prevent unauthorized use and accidents

Safety Precautions

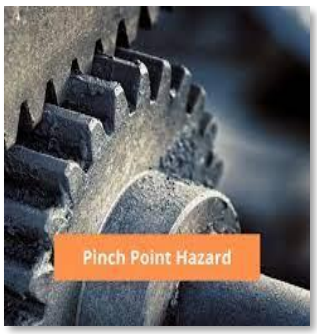
- Never park the forklift nearby any ignition source
- Chock the wheels, to prevent the from moving
- Report any defects to your superior for further action

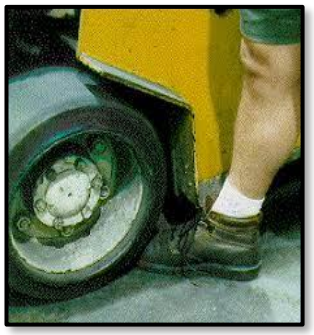
6. Maintenance: Adhere to the scheduled maintenance plan for ongoing reliability.

4.3 Safety Precautions

- Perform forklift safety inspections prior to carrying out daily task
- Always engage professionals to carry out inspections & repairs
- Avoid in contact with hot surfaces from the engine compartment while inspecting the forklift
- Use proper PPE while performing the inspection

- Beware of rotating parts / Pinch points during inspection
- Do not stand below the forklift mast while conducting the inspection
- Maintain 3 point contact when mounting / dismounting the forklift
- No naked flame at forklift charging area





4.4 The reasons for operators failing to carry out the inspections that could lead to serious accidents

Here are some key reasons why forklift operators may fail to carry out necessary inspections, which can lead to serious accidents:

1. Lack of Training
2. Overconfidence in Equipment:
3. Routine and Familiarity
4. Insufficient Procedures
5. Inadequate Supervision
6. Fatigue
7. Neglect of Documentation

1. **Lack of Training**

Operators may not receive comprehensive training on the importance and process of pre-operational inspections. This can include:

- **Insufficient Instruction:** Training often focuses on operational skills, such as driving and manoeuvring, rather than safety protocols and inspection procedures. If operators do not understand what specific aspects of the forklift to inspect or the potential consequences of neglecting these checks, they are less likely to perform them..

2. **Overconfidence in Equipment:**

- Operators who have not experienced problems with their forklifts for an extended period may develop a false sense of security. This overconfidence can lead them to believe that inspections are unnecessary, as they assume the equipment is always in good working order.

3. **Routine and Familiarity:**

- Repeatedly performing the same tasks can lead to a routine mindset. Operators may fall into the habit of skipping checks, thinking they know the equipment well enough to forego inspections.

4. **Insufficient Procedures**

Without clear guidelines, inspections can become inconsistent:

- **Lack of Standardization:** If there are no standardized checklists or procedures for inspections, operators may not know what to look for. This ambiguity can result in critical items being overlooked.
- **Poor Communication:** In some cases, the importance of inspections may not be effectively communicated within the organization, leading to varying practices among operators.

5. Inadequate Supervision

Supervisory oversight plays a crucial role in promoting safety:

- **Lack of Accountability:** When supervisors do not actively monitor safety practices or provide feedback, operators may feel less compelled to adhere to inspection protocols. The absence of oversight can create an environment where skipping inspections goes unnoticed.
- **Limited Support:** If supervisors do not emphasize the importance of inspections during team meetings or evaluations, operators may not view them as a priority.

6. **Fatigue**

Fatigue significantly impacts an operator's ability to perform inspections:

- **Long Working Hours:** Operators who work long shifts or are required to work overtime may experience physical and mental fatigue, impairing their focus and diligence during inspections.
- **Stress and Workload:** High-stress environments can contribute to fatigue, leading operators to rush through inspections or skip them entirely due to exhaustion.

7. Neglect of Documentation

Documenting inspections is crucial for accountability:

- **Failure to Record Findings:** Even when inspections are conducted, not documenting findings can lead to unresolved issues persisting in the equipment. Operators may not feel the urgency to address problems if there is no formal record.
- **Lack of Follow-Up:** Organizations that do not implement follow-up procedures for reported issues may contribute to a culture of negligence, where problems go unchecked.

MODULE 05:

TECHNIQUES AND REQUIREMENTS FOR SAFE OPERATIONS

SL NO	CONTENT
5.1	BASIC WORKPLACE SAFETY AND HEALTH (WSH) RULES FOR SAFE FORKLIFT OPERATION
5.2	CARGO HANDLING SYMBOLS. HANDLING INSTRUCTIONS
5.3	OPERATING PROCEDURES FOR DIFFERENT TYPES OF LOADS
5.4	OPERATING PROCEDURES FOR DIFFERENT TYPES OF TERRAIN AND CONFINED SPACES.
5.5	PROCEDURES OF REPORTING UNSAFE / UNAUTHORIZED FORKLIFT PRACTICES

TECHNIQUES AND REQUIREMENTS FOR SAFE OPERATIONS

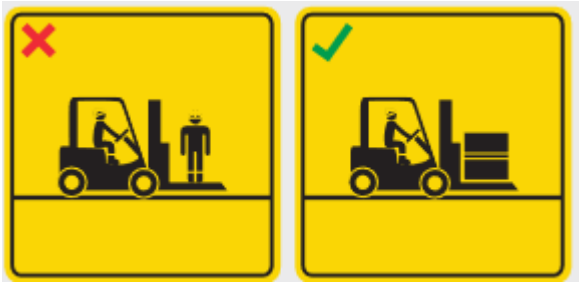
5.1 Basic Workplace safety and health (WSH) rules for Safe Forklift Operation

Forklifts are useful when heavy loads need to be handled and transported easily and quickly. Mishandling or inappropriate use-of forklifts, however, can result in property damage, serious injuries or even fatalities.Do your part at the workplace by operating forklifts properly and safely.

01. Operate a forklift only if you are trained and authorized.

Operating a forklift should only be done by trained and authorized individuals to ensure workplace safety. Improper operation can lead to serious injuries or fatalities. Certified operators are equipped to navigate hazards and comply with legal regulations and company policies. Restricting forklift operation to authorized personnel enhances efficiency and accountability while fostering a culture of safety. Regular training and refresher courses are essential for keeping operators informed about best practices. Ultimately, prioritizing trained operators is crucial for maintaining a secure and productive work environment.

02. Never use a forklift to carry or transport a person.



Using a forklift to carry or transport a person is strictly prohibited and can lead to serious injuries or fatalities. Forklifts are designed for moving materials, not for transporting individuals. Their design lacks safety features such as seat belts or protective enclosures for passengers, making it extremely unsafe. Furthermore, operating a forklift in this manner can compromise stability and control, increasing the risk of accidents. It is essential to adhere to safety regulations and protocols by ensuring that only designated personnel use proper equipment, like lifts or personnel carriers, for transporting people. Always prioritize safety to maintain a secure workplace environment.

03. Check blind spots before reversing

Checking blind spots before reversing is essential for preventing accidents when operating vehicles like forklifts. Blind spots can conceal pedestrians, obstacles, or other vehicles, increasing the risk of collisions. Operators should utilize mirrors for a broader view but also physically look around to ensure a clear path. Communicating with team members and reversing slowly enhances safety by allowing time to react to unexpected hazards. By consistently checking blind spots, operators can significantly reduce the likelihood of accidents and promote a safer work environment.

04. Report to your supervisor if you feel unwell.

Reporting to your supervisor if you feel unwell is essential for ensuring both your health and workplace safety. When you communicate your condition, it allows your supervisor to take appropriate actions, such as arranging for coverage or ensuring you can take a break

05. Do not overload forklift.

Overloading can compromise the stability and control of the forklift, increasing the risk of tipping or accidents. Each forklift has a specified weight limit, and exceeding this limit can lead to mechanical failures or unsafe driving conditions. Operators should always verify the load capacity and distribute weight evenly to maintain balance. Additionally, using proper lifting techniques and securing loads can further enhance safety. By adhering to weight limits, operators help ensure a safer work environment for themselves and their colleagues.

06. Do not speed.

Operating at a safe speed allows for better control and quicker reaction times when navigating obstacles, pedestrians, or tight spaces. Excessive speed increases the risk of accidents and can lead to tipping or loss of load stability. Additionally, driving at a cautious pace helps protect both the forklift and the goods being transported

5.2. Cargo handling symbols. Handling instructions

"Cargo handling Labels" help to ensure that greater care is taken with cargo handling. It must be possible to tell

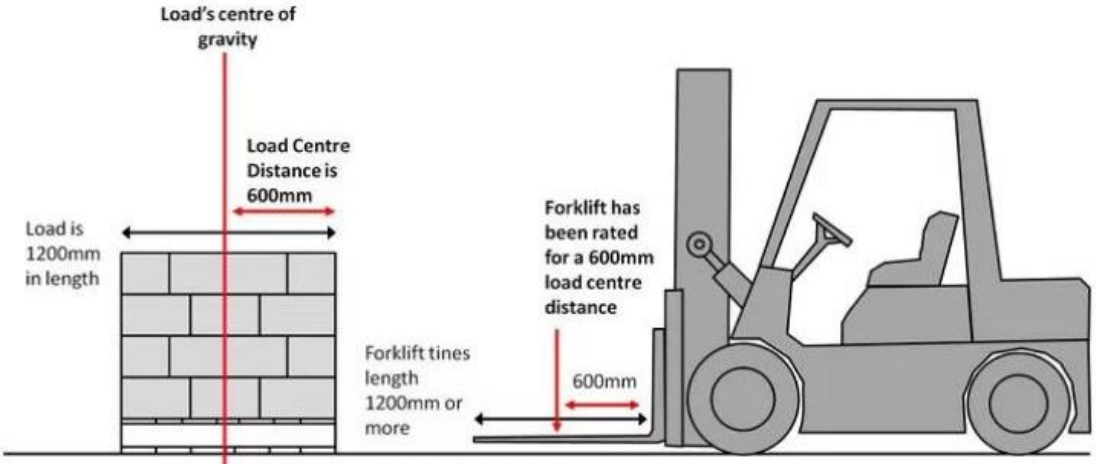
- whether the package is sensitive to heat or moisture
- whether it is at risk of breakage
- where the top and bottom area is and where the center of gravity is located
- where lifting gears may be attached for hoisting

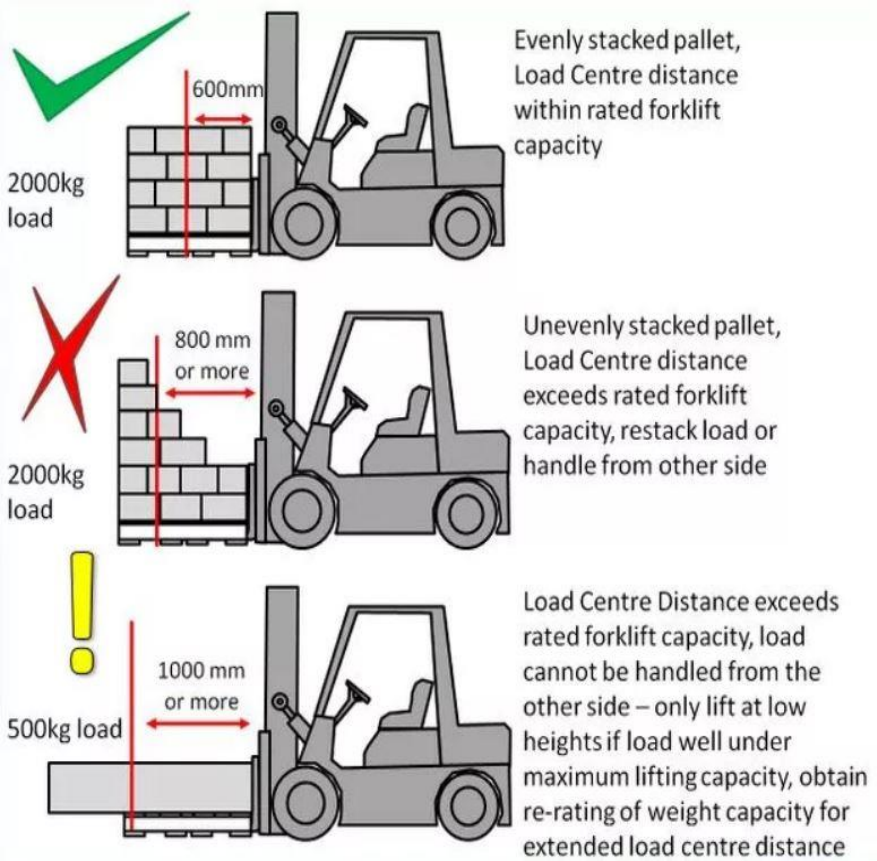
Packaging symbols represent various storage, delivery, and handling instructions for exporters. They also provide product safety and recycling information for end customers.

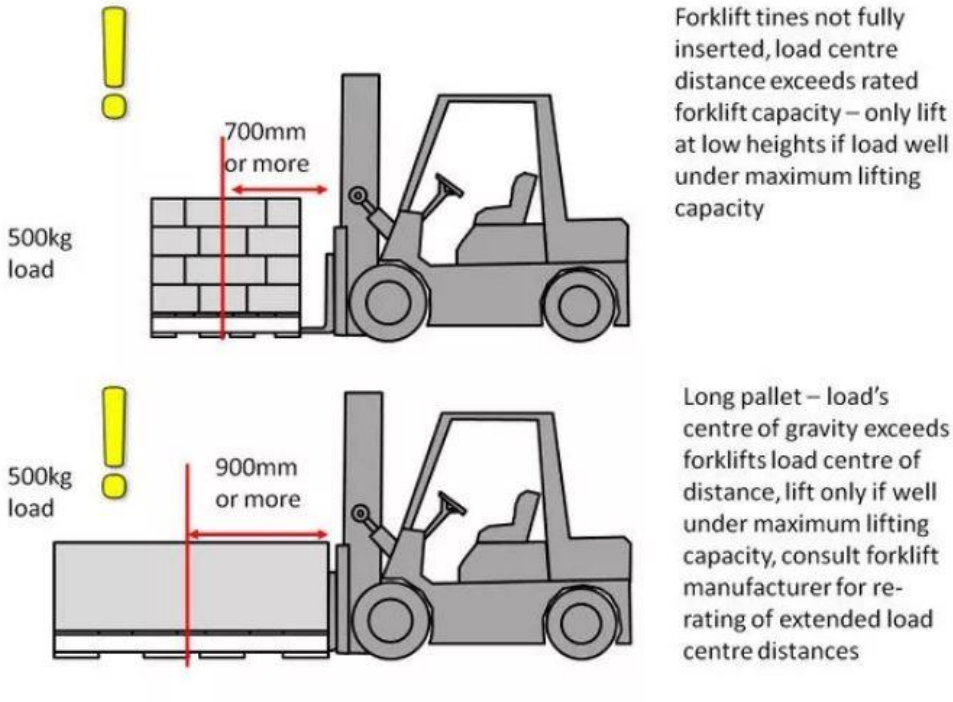
5.3. Operating procedures for different types of Loads

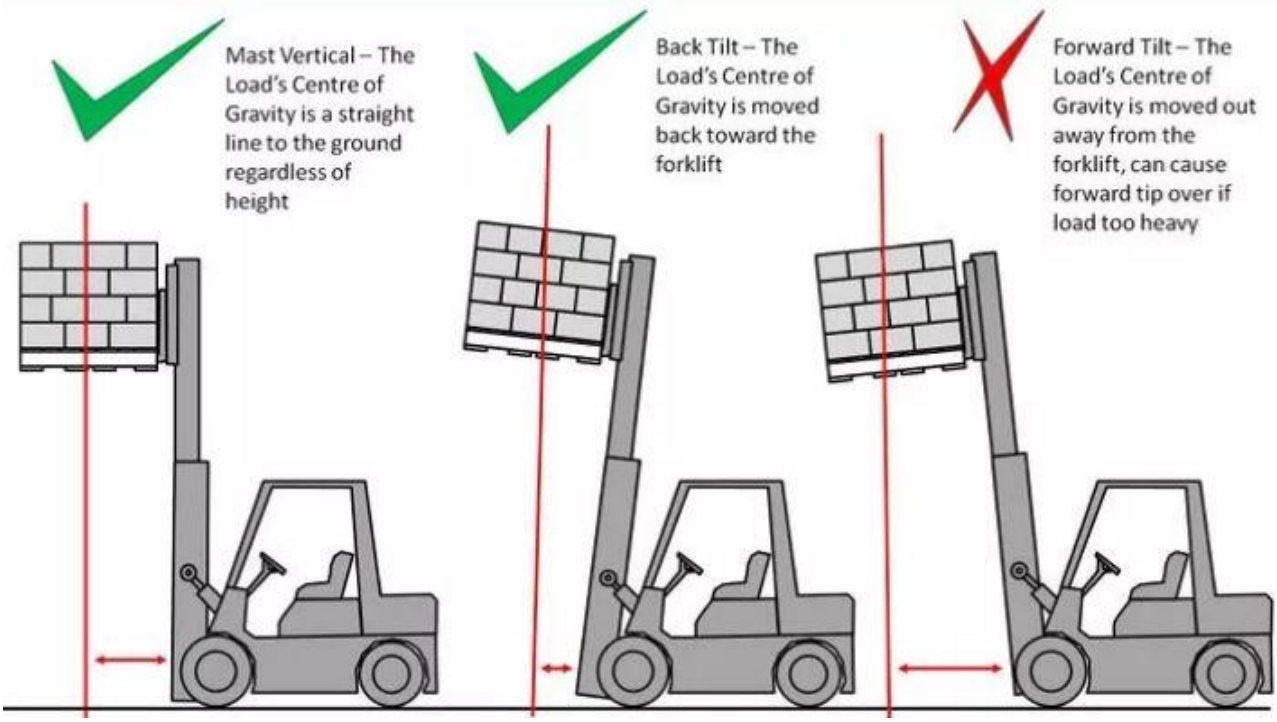
TYPES OF LOADS

- Off-centre loads are dangerous and should be centred before loading if possible
- If the load is not centred at the specified position, the forklift's capacity will be reduced. Loads come in all shapes and sizes, not just symmetrical boxes. The load size, position, and weight distribution critically affect the forklift's capacity and the stability of the truck.





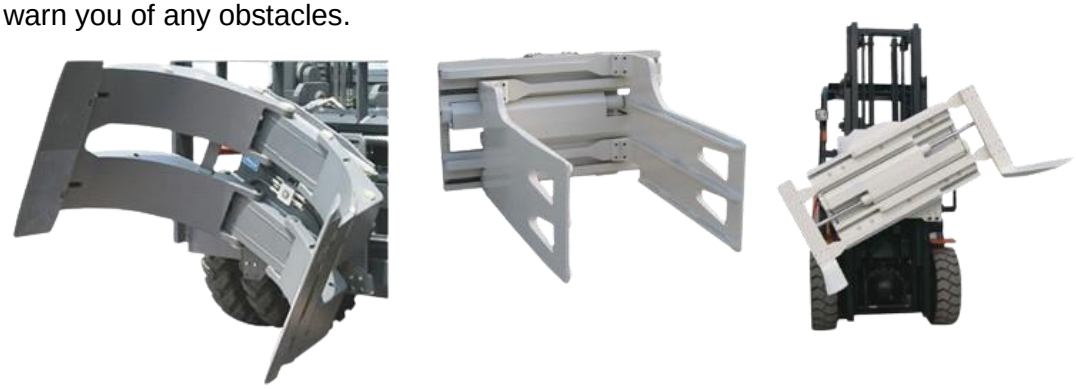


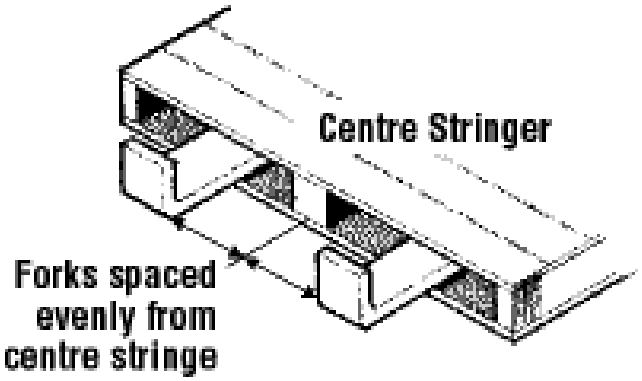


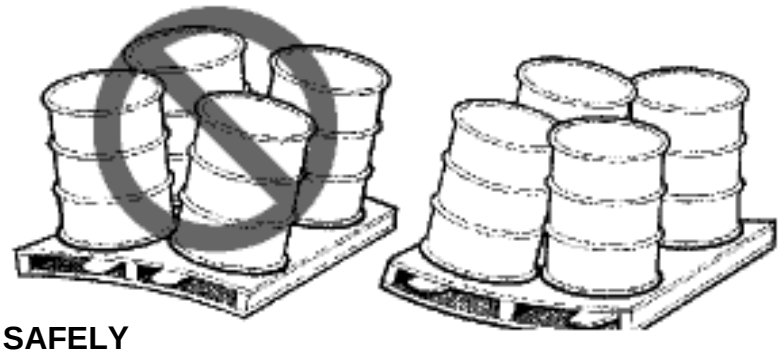
Forklifts are equipment's used for moving and storing materials in many industries. All materials and loads are not similar and handling them incorrectly can lead to accidents, injuries, or damage to property.

SECURE YOUR LOAD

Once you have selected your load, you need to secure it properly on the forks or the attachment. Straps, ropes, shrink wrap, or other means to prevent the load from shifting, sliding, or falling. Align the load evenly on both forks, and keep it as low as possible to the ground. If you are carrying a tall or wide load, you may need to use a spotter to guide you and warn you of any obstacles.







DRIVE SAFELY

You should always drive at a safe speed, and slow down when turning, stopping, or changing direction. Avoid sudden movements and keep a safe distance from other equipment's. Always keep the load tilted slightly back and raise it only when necessary. When driving on ramps, slopes, or uneven surfaces, you should drive with extra caution and stability.

STACK AND STORE PROPERLY

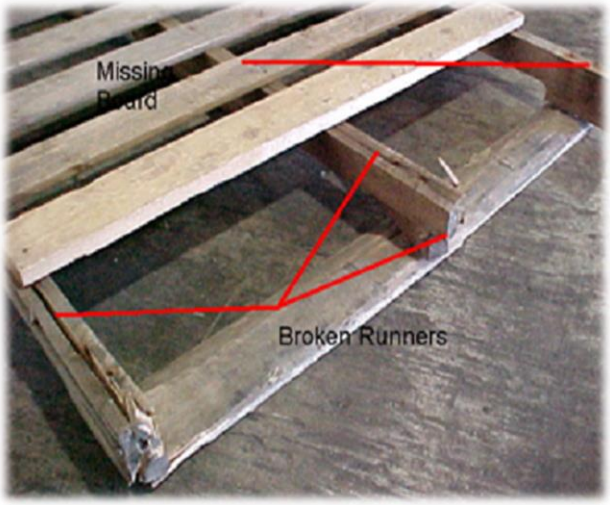
Choose a suitable location that is clear, level, and stable. Follow the stacking height and weight limits and avoid placing heavy loads on top of lighter or unstable ones.

INSPECT AND MAINTAIN YOUR FORKLIFT

Inspect and maintain your forklift regularly to ensure its optimal performance and safety. Perform a pre operational check before commencement of work and report any defects and malfunctions to your superior.

BEFORE HANDLING LOADS, BE AWARE OF THE FOLLOWING:

- Off-centre loads which may cause tip over or falling loads.
- Overloading which may cause tip over or falling loads.
- Damaged or loose loads may fall during transportation.



REQUIREMENTS AND RECOMMENDED PRACTICES

- Secure the load so it is safely arranged and stable.
- Do not carry damaged merchandise unless it has been secured by wrapping.
- Center the load as nearer as possible.
- Use caution when handling off-center loads that cannot be centered.
- Distribute the heaviest part of the load nearest the front wheels of the forklift.
- Do not overload. Know the stated capacity of your forklift and do not exceed it.
- A forklift's capacity is rated for a specified load center. If the load is off-center, improperly distributed, or oversized, it may exceed capacity and unbalance the forklift.

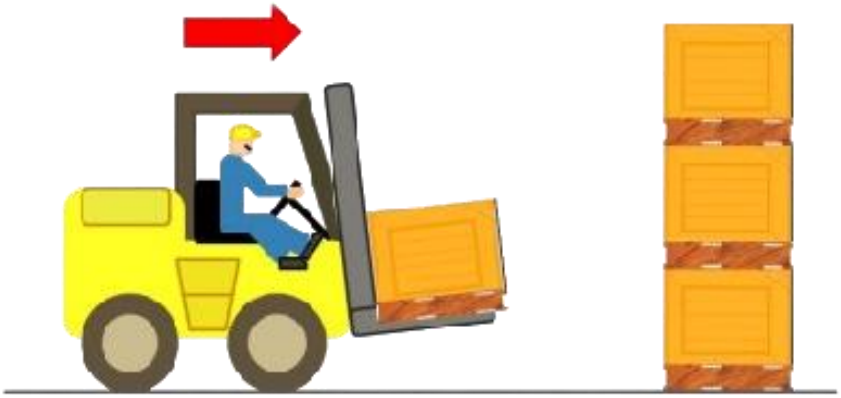
HANDLING DIFFERENT TYPES OF LOADS & ITS PROCEDURES

HANDLING – STACKING A LOAD

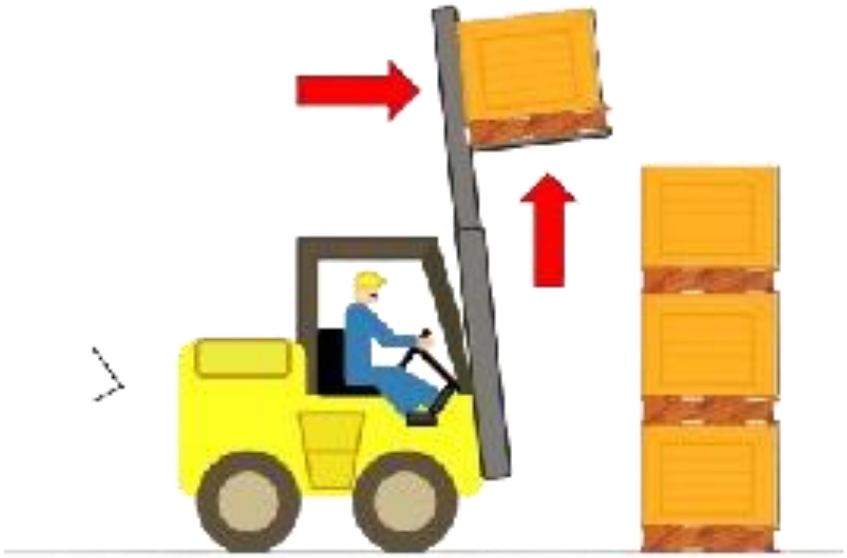
1. The fork should be spread wide to pallets entry point to balance the load
2. Approach stack squarely with load low and tilted backwards and stop in front of the stack
3. Raise the fork with the load to the required stacking height.
4. After reaching the required height, move forward slowly
5. After stacking the load, adjust the fork to be contact free from the pallet
6. Before reversing take a look behind before reversing and withdraw the fork out
7. When forks are clear of the stack, lower the fork just above the ground
8. Lower the forks to just above the ground.

HANDLING – STACKING A LOAD

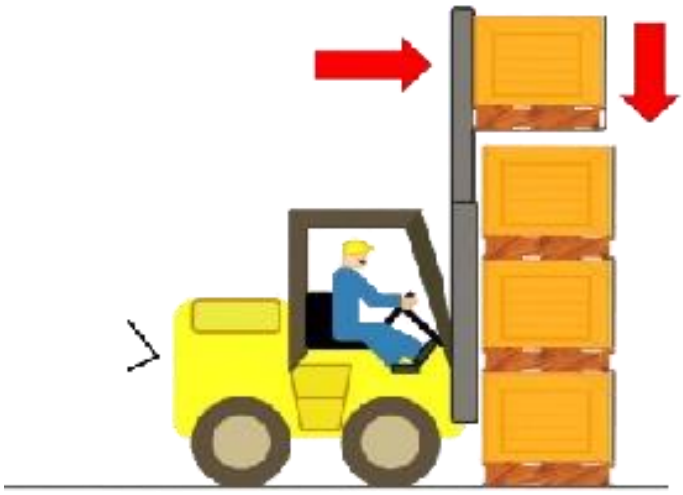
A) approach stack squarely with load low and tilted backwards



(b) Slow down, stop at the face of stack. Raise the load to the desired stacking height

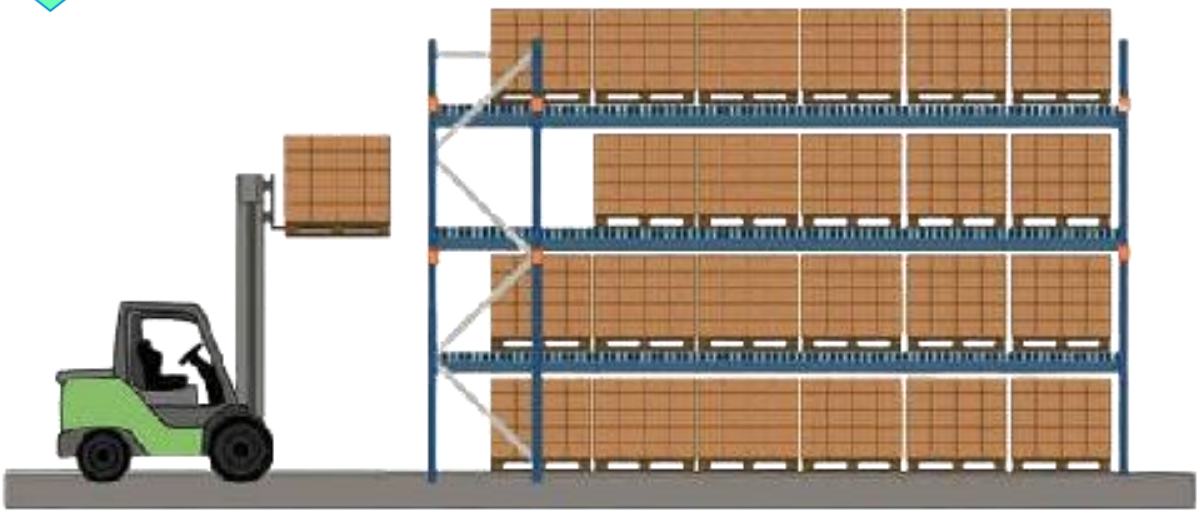


(c) When the load is over the stack, level the load and lower the load onto the stack

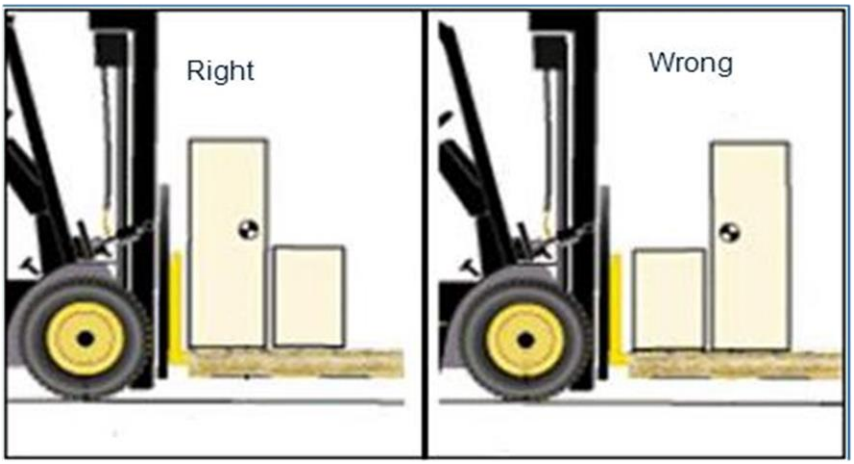


HANDLING – DESTACKING A LOAD

1. Stop at the face of the rack and level the forks
2. Raise forks to a position permitting clear entry into pallet
3. Insert forks fully by inching forward slowly and adjust level & height of forks so they don't bind with pallet pockets
4. Stop the forklift when desired location reached and raise the load until clear of rack
5. Stop the forklift when the load clear the face of the rack, tilt the load backwards (avoid jerking when tilting a load especially when the load is raised high) and lower the load
6. Lower load to travelling height: and check to ensure that the reverse path is clear



HANDLING – UNSTABLE LOAD



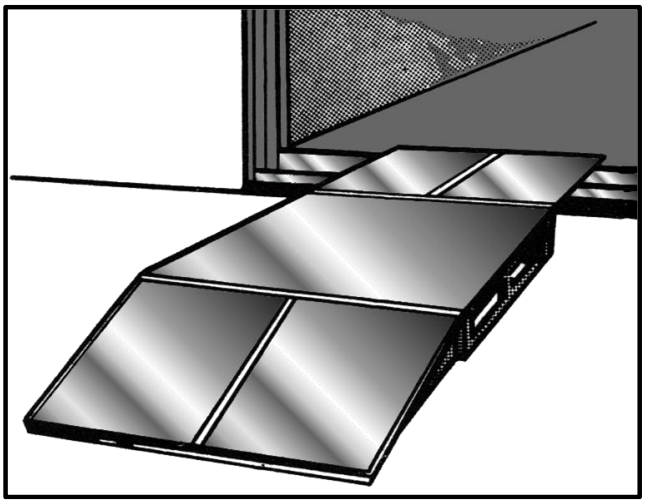
- Tilt the forks back to shift the weight of the load and make it more stable. If the load is unbalanced, keep the heavier end closer to you. Tilt the mast back. Lift the load and tilt it back a little more before travelling.
- The operator must always ensure the load is balanced out by the forklifts counterbalance or risk a forward tip over. A mast tilted forward to far forward can cause the forklift to become unstable and result in a forward tip over.
- Excessive speed is one of the commonest causes of forklift truck overturns. The risk is even higher when combined with surface hazards, slopes or a raised load. Jerky motion or sudden heavy braking may affect the forklift stability and throw the load off your forks.

5.4 Operating procedures for different types of terrain and confined spaces.

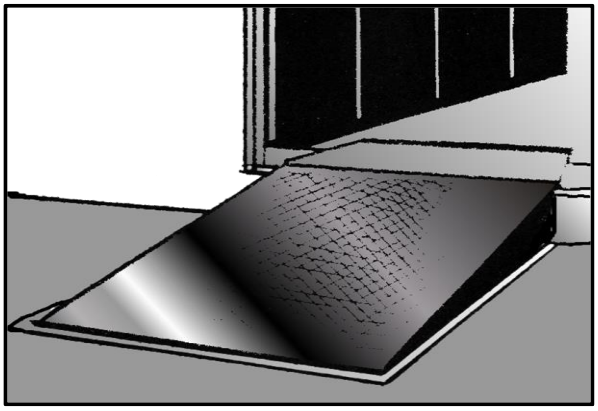
Travelling over a Ramp Bridge & Inclines

- The lifting controls use one lever for moving the load up and down and another for tilting the load back and forth.
- Pushing the lifting lever forward moves the load up while moving it backwards moves it down. If heavy loads will be handled, slope should be no more than 3-5%.
- If the space is not permitted, you may increase the slope to an absolute maximum of 10%, and this will work only for light loads.
- Loaded forklifts must be driven with the load pointed up the ramp (good standard practice is to ALWAYS drive with the load pointed up the ramp or slope).
- If you're carrying a load, make sure the forks are pointed uphill as you reverse down the ramp slowly.
- When driving down a ramp with an empty forklift, travel in reverse and keep the lift's forks pointed downward.
- When traveling with a load, the load should point up the incline.
- When going down a slope, be careful about the load falling off.

Bridge Plates



Dock Levelers



Operating in Confined Spaces

- Confined spaces are often found in industrial workplaces and can pose serious safety hazards.
- Three-wheel counterbalance forklifts are perfect for narrow aisles: These have three-wheels while the counterbalance forerunners come with four. These have more maneuverability and are best for confined spaces and narrow site aisles.
- Diesel forklift discharge carbon monoxide which is poisonous, during forklift operations
- Electric forklifts fitted with a catalyst converter helps oxidize carbon monoxide into a less toxic gas
- Monitor & record carbon monoxide levels with monitoring devices or a carbon monoxide detector.
- A forklift maintenance regime is carried out & maintained
- All in house rules & WSHA requirements are strictly complied & adhered.

3 Wheel Electric Forklift

5.5. Procedures of reporting unsafe / unauthorized forklift practices

Report unsafe/unauthorized forklift practices

Follow reporting procedures

- Do forks to push loads with fork
- Using the forklift to push or tow another forklift
- Using the forklift to transport personnel
- Do not use I fork to lift the load
- Always adjust the fork according to pallet size
- Ensure that the fork is not cracked, deflected or worn out
- Report all incidents to immediate superior in accordance with organizational procedures.

IF YOUR FORKLIFT OVERTURNS DURING OPERATIONS, WHAT MUST YOU DO?

- ✓ Shift gear to neutral immediately
- ✓ Hold on to the steering wheel firmly
- ✓ Tuck in your chin & stay in the driver's seat
- ✓ Go with the flow of the machine

MODULE 06:

COMMON SAFETY LAPSES BY FORKLIFT OPERATOR

SL NO	CONTENT
6.1.	COMMON SAFETY LAPSES BY FORKLIFT OPERATORS AND CONSEQUENCES
6.2.	COMMON FORKLIFT ACCIDENTS BY FORKLIFT OPERATORS:
6.3.	**CASE EXAMPLE:** FATAL ACCIDENT AT WAREHOUSE PREMISE

COMMON SAFETY LAPSES BY FORKLIFT OPERATOR

6.1. Common Safety Lapses by Forklift operators and consequences:

In Singapore, forklift safety is governed by regulations set out by the Ministry of Manpower (MOM) and the Workplace Safety and Health (WSH) Act.

Here are common safety lapses by forklift operators that can occur in this regulatory context:

1. Lack of Proper Certification:

- Operators must be certified by an accredited training provider. Operating without the necessary certification is a significant lapse.
- Certification ensures that operators have the necessary skills and knowledge to Certified operators are trained on relevant safety regulations and workplace practices, ensuring compliance with local laws.

Consequences of Operating Without Certification:

- **Increased Risk of Accidents:** Uncertified operators may lack the skills to handle forklifts properly, leading to a higher likelihood of accidents, injuries, or fatalities.
- **Negative Impact on Workplace Safety Culture:** A lack of certified operators can undermine the overall safety culture, leading to complacency and neglect of safety protocols.

2. Inadequate Pre-Operation Checks:

- Failing to conduct daily safety checks as required by regulations can lead to unsafe operating conditions.
- Inadequate pre-operation checks are a significant safety lapse among forklift operators. In Singapore, regulations mandate daily safety inspections to ensure that forklifts are in safe working condition before use.

Consequences of Skipping Pre-Operation Checks:

- **Increased Accident Risk:** Failing to identify and address equipment issues can lead to malfunctions during operation, resulting in accidents or injuries.
- **Regulatory Violations:** Not conducting required pre-operation checks can lead to non-compliance with the Workplace Safety and Health (WSH) regulations, resulting in fines or legal repercussions.
- **Costly Repairs and Downtime**: Ignoring maintenance issues can lead to more severe damage, resulting in costly repairs and extended downtime for the equipment.

3. Overloading:

Ignoring the load capacity specified by the manufacturer can lead to tipping and loss of control, contrary to safety guidelines.

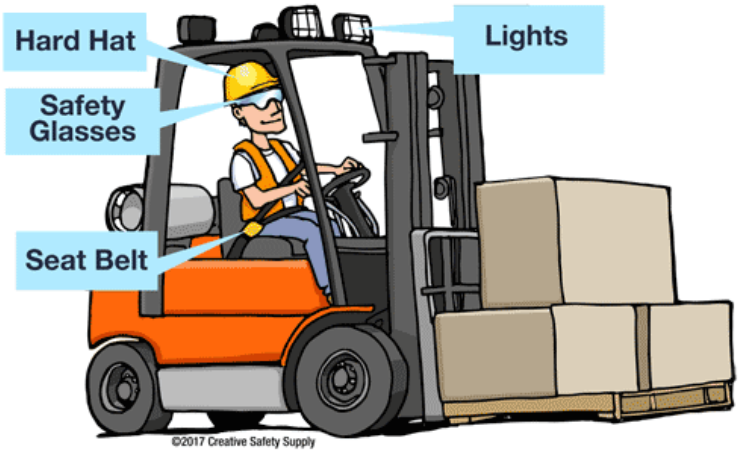
Important of Load Capacity

- **Manufacturer Specifications**: Each forklift has a specified load capacity determined by the manufacturer, which accounts for the design and stability of the equipment.
- **Safety and Stability**: Operating within the specified load limits ensures the forklift's stability and minimizes the risk of tipping over during operation.

Consequences of Overloading

- **Increased Risk of Tipping:** Overloading significantly raises the centre of gravity, making the forklift more prone to tipping, especially when turning or travelling on uneven surfaces.
- **Loss of Control:** Excess weight can impair braking distance and maneuverability, leading to accidents and collisions.

4. Neglecting Personal Protective Equipment (PPE):



Not wearing required PPE, such as safety shoes, helmets, and high-visibility vests, increases injury risk.

Importance of PPE

- **Injury Prevention:** PPE such as safety shoes, helmets, gloves, and high-visibility vests are designed to protect workers from potential hazards associated with forklift operations, reducing the risk of injuries.
- **Visibility:** High-visibility clothing helps ensure that forklift operators and other workers can see and be seen, especially in busy environments where machinery is in use.

Consequences of Neglecting PPE

- **Increased Risk of Injuries**: Not wearing appropriate PPE can lead to serious injuries, such as foot injuries from falling objects, head injuries from collisions, or exposure to hazardous materials.

5. Failure to Follow Safe Operating Procedures:

Not adhering to established procedures for operating forklifts, such as using horns at intersections, can result in collisions.Failure to follow safe operating procedures is a significant safety lapse that can lead to accidents and injuries in forklift operations

Importance of Safe Operating Procedures

- **Preventing Accidents:** Adhering to established procedures, such as using horns at intersections and following traffic rules, helps reduce the likelihood of collisions and other accidents.
- **Promoting Consistency:** Standard operating procedures (SOPs) ensure that all operators follow the same guidelines, leading to predictable and safer work practices.

Consequences of Not Following Procedures:

- **Increased Collision Risk: I**gnoring procedures like using horns or signals at intersections can lead to collisions with other forklifts or pedestrians.
- **Injuries and Fatalities:** Accidents resulting from unsafe practices can lead to serious injuries or fatalities, impacting not only the involved individuals but also their coworkers and the organization as a whole.

6. Distracted Operation:

Using mobile devices or engaging in conversations while operating a forklift can lead to accidents, which goes against best practices.

Importance of Minimizing Distractions

- **Maintaining Focus:** Operating a forklift requires full attention to the surroundings, including other vehicles, pedestrians, and obstacles. Distractions can impair an operator's ability to make quick, safe decision
- **Preventing Accidents: C**oncentration is vital for safe maneuvering, especially in busy environments. Distractions can lead to collisions, tip-overs, or other accidents.

Consequences of Distracted Operation

- **Increased Accident Risk:** Engaging with mobile devices or having conversations can divert attention away from the task, increasing the likelihood of accidents.
- **Injury Potential**: Accidents resulting from distractions can lead to serious injuries for the operator, other workers, and even bystanders.
- **Damage to Equipment and Property:** Collisions or mishandling caused by distractions can lead to costly damage to forklifts, goods, and the work environment.

7. **Improper Parking Procedures:**

Improper parking procedures for forklifts are a significant safety concern that can lead to accidents and injuries.Not following regulations for safe parking (e.g., on inclines or in high-traffic areas) can pose hazards.

Importance of Proper Parking Procedures

- **Preventing Roll-Away Accidents:** Proper parking techniques, such as using parking brakes and positioning forks on the ground, help prevent forklifts from rolling away, especially on inclines.
- **Minimizing Collision Risks:** Parking in designated areas away from high-traffic zones reduces the likelihood of collisions with other vehicles and pedestrians.

Consequences of Improper Parking

- **Increased Risk of Accidents**: Improperly parked forklifts can block pathways or create blind spots, increasing the risk of collisions and injuries.
- **Potential for Rollovers**: Forklifts parked on inclines without proper precautions can roll over, posing serious risks to operators and nearby workers.

6.2. Common Forklift accidents by Forklift operators:

Forklift accidents commonly occur when a forklift strikes someone, when a forklift rolls over and causes injuries, when a forklift falls and strikes someone, when a forklift is used improperly due to inexperience, when there are collisions caused by blocked eyesight, and when there are mechanical issues.
Understanding the risks and hazards involved with driving a large forklift is the first step towards preventing common forklift accidents.

1. Struck by Forklift
2. Forklift Tip-Over or Roll-over
3. Loads Falling from Forklift
4. Mechanical Failures

1. Struck by Forklift

Forklift operators occasionally inadvertently run over bystanders or coworkers. Forklift accidents can be attributed to various factors, including unsafe working conditions that limit the driver's space or reaction time. One of the most frequent causes of these mishaps is operator distraction. Here, there might not be enough warning indicators.

Fortunately, workplace improvements can help prevent mishaps like these. To alert coworkers and pedestrians that a forklift might be approaching, forklift work zones can be marked with barriers and floor tape. Additionally, allowing employees to take breaks and rest throughout the day will help to maintain their focus and sharp wits.

Causes

- The operator not paying attention
- A lack of warning signs

Prevention

- Operators should take breaks during the workday
- Put down floor tape for pedestrians and workers to see that work is being done in that area
- Add barriers around the forklift work area so people don't enter

2. Forklift Tip-Over or Rollover:

Forklifts are large, bulky vehicles not meant for sharp bends. An operator may tip over a forklift, which can be hazardous or even fatal, if they attempt to turn the machine too quickly or if the weight is more than it can support. Preventing forklift rollovers requires operating a forklift correctly.

Operators of heavy machinery need to be cautious over uneven surfaces, maintain an even load, and refrain from turning too quickly. Forklift accidents can be avoided and the machine kept safely on the ground by adhering to speed limits, minimizing loads, and reducing speed while approaching curves.

Causes

- Fast turns
- Unbalanced loads
- Incline turn
- Uneven surfaces

Prevention

- Maintain the appropriate speed limit
- Slow down near and around corners
- Don't exceed the forklift's weight capacity
- Keep the load low to the ground

3. Loads Falling from Forklift

When a forklift moves, uneven or imbalanced loads might shift swiftly and fall, resulting in the kind of accident that has resulted in numerous forklift deaths.

Another risk factor for tipping and falling with a load is moving too quickly. When transferring a pallet with a high load, always check that the loads are centered on the forks and do not move at an excessive speed. To help steady the load even more, tilt the mast back.

Causes

- Loads not loaded properly
- Moving or lifting too quickly
- Bent lift forks

Prevention

- Avoid carrying damaged loads
- Center each load
- Don’t move too fast when loading or lifting

4. Mechanical Failures

Even with caution and adherence to safety protocols, accidents can still occur. This is due to the fact that the forklift itself needs to be properly maintained and in good working order; the operator is only one component of the equation.

Forklift accidents and bodily injury are primarily caused by mechanical breakdowns and failures. Things like worn out outbreaks, damaged tires, and leaking hoses and valves can all result in accidents.

Causes

- Lack of inspections
- Worn-out brakes
- Leaks
- Damaged tires

Prevention

- Conduct pre-shift inspections.
- Service equipment regularly.
- Don’t operate on faulty equipment.

6.3. Case Example: FATAL ACCIDENT AT WAREHOUSE PREMISE

Workplace Premise: Warehouse premise in a distribution park

Forklift: 3 ton (load capacity)

Work Activity: Deceased was taking stock of goods to be transported out of the warehouse. He squeezed through the gap between two racks and was crushed when a forklift pushed the racks closer to make space for more racks.

Nature of Accident: Crushed between objects

Description of Accident

- The deceased worker was involved in tallying stock stored on metal racks within yellow boxes.

- The deceased worker was conducting checks in between two metal racks just prior to the accident.
- To free up space for more cargo, a forklift operator used his forklift to push the adjacent metal racks. The deceased worker was trapped in between the metal racks. Deceased worker was found dead an hour later.

MODULE 07:

SAFETY RULES (DO'S AND DON'TS)

SL NO	CONTENT
7.1	FORKLIFT SAFETY RULES
7.2	DO'S AND DON'T S OF FORKLIFT OPERATION
7.3	THE CONSEQUENCES OF FAILING TO OBSERVE FORKLIFT SAFETY RULES

SAFETY RULES (DO'S AND DON'TS)

7.1.Forklift safety rules :

These are some of the most important guidelines that should always be observed and taken into account, even if there are many more forklift safety regulations that apply to forklift operators.

1 Use forklifts at safe speeds.

A safe forklift speed is one that is reasonable and appropriate for the work environment. The faster a forklift drives, the greater the chance of injury from a collision.

- **Follow Speed Limits**: Adhere to established speed limits for different areas (e.g., 3-5 mph in pedestrian zones).
- **Adapt to Environment:** Slow down in narrow aisles, ramps, and loading areas for better control.
- **Load Considerations:** Reduce speed when carrying obstructive or heavy loads to maintain visibility and stability.

2 Avoid Making Sudden Stops:

Forklift drivers must stop smoothly rather than abruptly. Abrupt pauses might endanger both the load and anybody around.

- **Smooth Deceleration**: Forklift drivers should practice gradual braking to maintain control and ensure stability of the load.
- **Load Safety:** Abrupt stops can shift or drop loads, increasing the risk of injury to nearby workers and damaging equipment.
- **Driver Awareness:** Stay alert to surroundings and anticipate the need to stop well in advance to avoid sudden braking.

3 Priority for Pedestrian Safety

A forklift driver should constantly be aware of pedestrians and give them the right of way, just as they would while driving a vehicle.

- **Constant Awareness: F**orklift drivers should remain vigilant for pedestrians in their vicinity, especially in high-traffic areas.
- **Yielding:** Always give pedestrians the right of way, allowing them to cross or move freely in shared spaces.
- **Use of Signals:** Utilize horns or lights to alert pedestrians when approaching blind spots or intersections.

4. **Be Aware of Fork Position**

When driving a forklift, the forks must be properly positioned. When traveling across the work facility, keep the forks as low as possible (but high enough to pass bumps).
Always maintain the forks at a safe height to enhance visibility and reduce the risk of collisions. Lower the forks when driving and avoid lifting them too high to prevent instability. Regularly check and adjust the fork position as needed to ensure safe operation.

5. Watch Out for Blind Spots While Driving a Forklift

Many workplaces contain blind spots that can obstruct visibility for forklift operators. These areas make it challenging to see pedestrians, other vehicles, or obstacles, increasing the risk of accidents.

To enhance safety:

- **Identify Blind Spots** : Be aware of common blind spots, such as corners, intersections, and narrow aisles.
- **Use Mirrors and Camera :** Utilize mirrors or rear-view cameras to monitor areas that are difficult to see.

6. Keep Alert to Floor Conditions While Driving a Forklift

Many forklift drivers often overlook floor conditions, but being aware of them is crucial for safety. Here's why:

- ✓ Grease spots
- ✓ Oil smears
- ✓ Spills
- ✓ Loose sand or dirt

These can all be dangerous to a forklift driver with a load in transport as they may cause the forklift to slide or slip and lose traction to the floor.

7.2 Do's and Don't s of Forklift Operation

Do's :

1. Ensure operators are trained and licensed to use the forklift

- Forklifts should only be operated by individuals who have been fully trained and hold a forklift licence.
- Forklift operators are required to attend safety training courses conducted by MOM-Accredited Training Providers.

2. Perform visual checks before each work shift/day

- Forklift operators do routine equipment checks. Checked brakes, steering, controls, warning devices, seat belts, tires, and diesel for leaks, among other things.

3. Wear appropriate personal protective equipment when inspecting and operating

- Forklift operators must wear the necessary PPE, including safety shoes, helmets, ear plugs, and reflective jackets.
- Seat belts should be secured at all times in order to allow the operator to stay within the forklift cage during operations.

4. Pre-Operation Check Before starting the forklift

- Before starting the forklift, check the controls for all signal identification equipment, including mirrors, reverse indicator, horn, and other check points.

5. Drive within the posted speed limit and in approved areas

- Never cross the speed limit.
- Corners and turns "GO" slowly.

6. Load Stability and Safety Checks Before Lifting

- Before shifting loads, ensure they are stable and avoid lifting any damaged objects.

7. Safe Practices for Driving Up Ramps

- When driving up ramps, move in a forward direction.
- Driving up with the load facing forward helps keep the center of gravity lower, reducing the risk of tipping.
- It's easier to control the forklift and maintain traction while ascending when moving forward, which enhances safety.

8. Safe Practices for Driving Down Ramps

- When driving down ramps, move in a backward direction.
- The load is more stable when moving backward, as it helps to keep the center of gravity low and the load secure.
- It's easier to control the forklift's descent when moving in reverse, reducing the risk of tipping or losing control.

9. Proper Forklift Parking

- Forklift is parked in a designated area.
- Fully lower the forks to the floor and apply the park brake.
- Do not park the forklift near a source of ignition, for example, near a doorway or a pit.
- Before getting off the forklift, lower the forks to ground level, ensure that the parking brake is engaged, the controls are in neutral and the power is shut off.
- Remove the ignition key and secure the forklift at all times when not in use.
- Choke the wheels if there is a risk of the forklift moving.

DON'TS

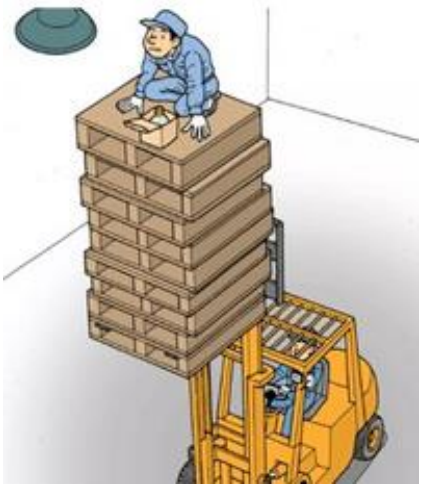
1. **Don't leave your forklift unattended:**

Leaving a forklift unattended can pose serious safety risks, including:

- **Accidental Movement:** Forklifts left running or in gear can roll away, potentially causing injury to workers or damage to equipment.
- **Unauthorized Use:** Unattended forklifts may be used by untrained personnel, leading to accidents or improper operation.

2. **Don't travel with raised load:**

Travelling with a raised load on a forklift poses significant safety risks.



- **Stability Risks:** A raised load raises the centre of gravity, increasing the likelihood of tipping over, especially when turning or navigating uneven surfaces.
- **Limited Visibility:** A raised load obstructs the operator's view, making it difficult to see obstacles, other workers, or changes in the environment. This increases the chance of accidents.

3. **Don't Over Speed the Forklift**

- **Increased Accident Risk:** Excessive speed heightens the likelihood of collisions with people or obstacles, potentially causing serious injuries.
- **Loss of Control:** Forklifts are harder to maneuver at high speeds, especially around corners or in tight spaces, increasing the risk of tipping.

Don't Pick Up Other Riders

- Almost all forklifts are designed for driver riders only, unless the forklift has been specifically designed to accommodate an additional rider. Never allow additional riders to board the forklift, as this can create an unstable balance and also block the driver's line of view.

4. Don’t Drive with the Forks Raised

- Always drive with the forks lowered, and while parking, drop the forks to the ground.

7.2 Do’s and Don’ts of Carring loads:

Do’s

- Assess the load before lifting. Check weight, size, load centre and security
- Make sure that pallets are in good condition
- Check safe working load (SWL) of racking before placing loads onto it
- Make sure load does not obstruct view. If it does, drive in reverse, looking in direction of travel
- Make sure the load does not exceed capacity of forklift
- Use suitable attachments for lifting unusual or wide loads
- Lower loads at a safe speed

Don'ts

- Lift loads greater than the capacity of the forklift
- Move a load that appears unsuitable or unstable (including on a damaged pallet)
- Travel with a bulky load that blocks your view
- Travel with a raised load, unless the forklift is designed specifically for this
- Leave the vehicle with the load raised.

7.3 The consequences of failing to observe forklift safety rules:

The consequences of failing to observe forklift safety rules refer to the negative outcomes that can arise when safety protocols and regulations for operating forklifts are not followed. These consequences can affect individuals, organizations, and overall workplace safety, leading to:

1. Injuries and Fatalities:

Accidents can lead to severe injuries or deaths of operators, coworkers, or bystanders.

Tip-Overs: Forklifts can easily tip over if not operated properly, leading to crushing injuries for the operator or nearby workers.

Collisions: Forklifts may collide with pedestrians or other vehicles, causing serious injuries or fatalities.

Falling Loads: Improperly secured loads can fall during lifting or transport, posing a significant risk to anyone in the vicinity.

Struck-by Incidents: Operators or workers can be struck by moving forklifts, leading to blunt .

2. Property Damage:

Improper operation can result in damage to goods, equipment, and infrastructure, leading to costly repairs.

Damage to Goods: Forklifts may mishandle loads, causing products to be dropped or crushed, resulting in financial losses and wastage.

Equipment Damage: Accidental collisions can lead to damage of the forklift itself or other machinery, necessitating repairs or replacements

3. Legal Repercussions:

Fines, lawsuits, or regulatory penalties imposed on individuals or companies for non-compliance with safety laws.

Regulator bodies may impose monetary penalties for safety violations, which can be substantial depending on the severity and frequency of the infractions.

4. Regulatory Scrutiny

Refers to increased monitoring and evaluation by safety authorities in response to safety violations or a poor safety

Increased Compliance Requirements: Companies may be mandated to implement additional safety measures, training programs, or reporting procedures to address identified deficiencies.

Penalties for Non-Compliance: Continued violations may result in more severe penalties, including fines or operational restrictions.

Loss of Operating Licenses: In extreme cases, persistent non-compliance can lead to suspension or revocation of licenses necessary for operation.


The End