

Ultimate Guide to Forklift Operations & Safety

A visual quick-reference manual for operators, managers, and EHS professionals.



The Industrial Workhorse: Powering Modern Operations



A powered industrial truck used to lift and move heavy materials over short distances with little human effort.

(Also referred to as Lift Truck, Fork Truck, Fork Hoist, and Forklift Truck).

Deployment Ecosystem



Construction Sites



Manufacturing Plants



Warehouses



Storage Godowns

Categorizing the Forklift Ecosystem

Dashboard Matrix

Structural Types

- Warehouse
- Site Loader
- Counterbalance
- Telehandler
- Heavy-Duty
- Rough Terrain
- Pallet Jack
- Walkie Stacker
- Order Picker
- Reach Fork Truck

Fuel Sources



Diesel Powered



Electric Powered



Gasoline Powered



LP-Gas Powered

OSHA Classifications

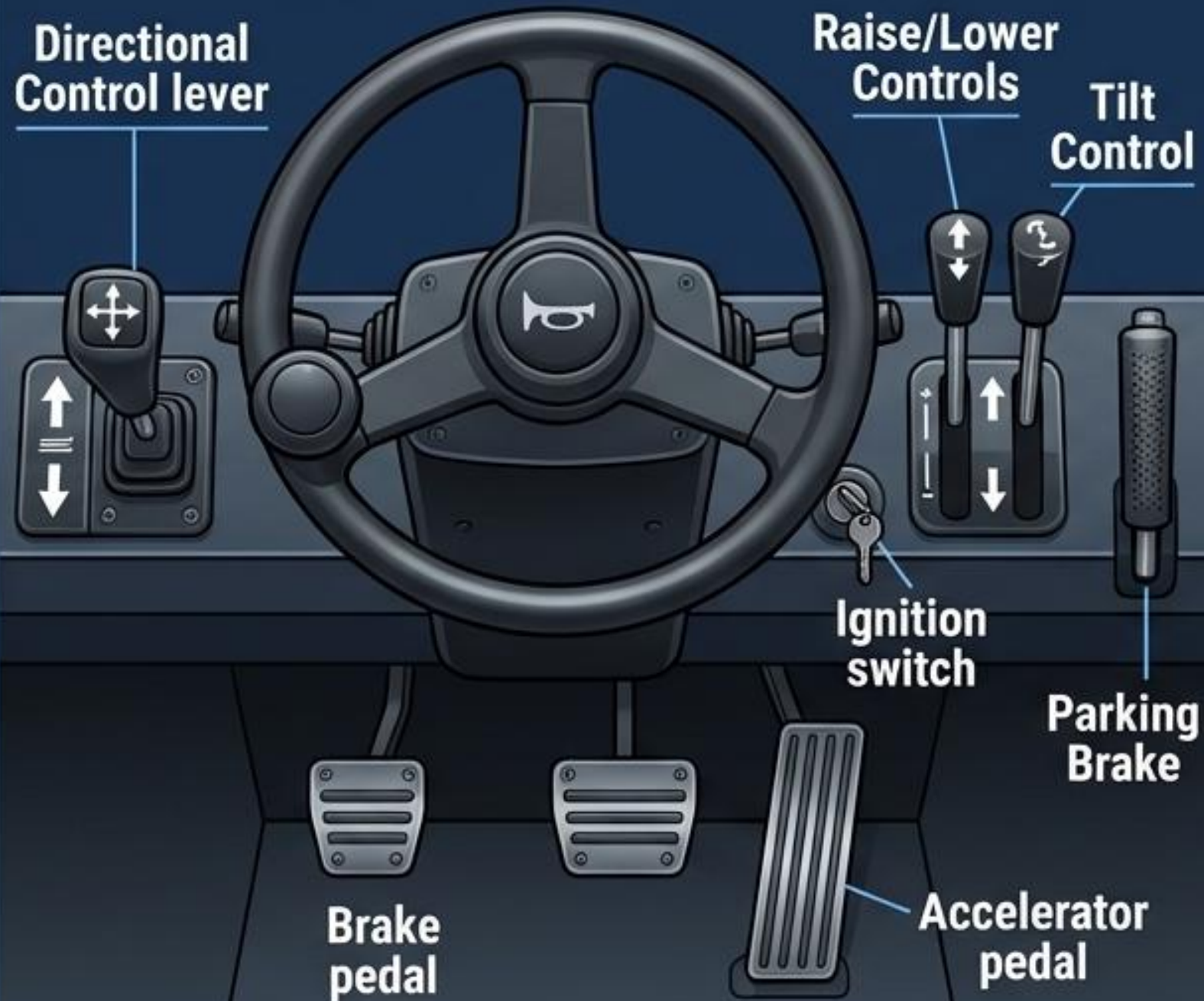
- Class-I:** Electric Motor Riding
- Class-II:** Electric Motor Narrow Aisle
- Class-III:** Electric Motor Hand/Rider
- Class-IV:** IC Engine Cushion Tires
- Class-V:** IC Engine Pneumatic Tires
- Class-VI:** Electric/IC Tractors
- Class-VII:** Rough Terrain

Blueprint and Anatomy of a Counterbalance Forklift



The Operator's Control Center

Primary Controls



Critical Gauges



Engine Temperature



Battery Gauge



Fuel Gauge



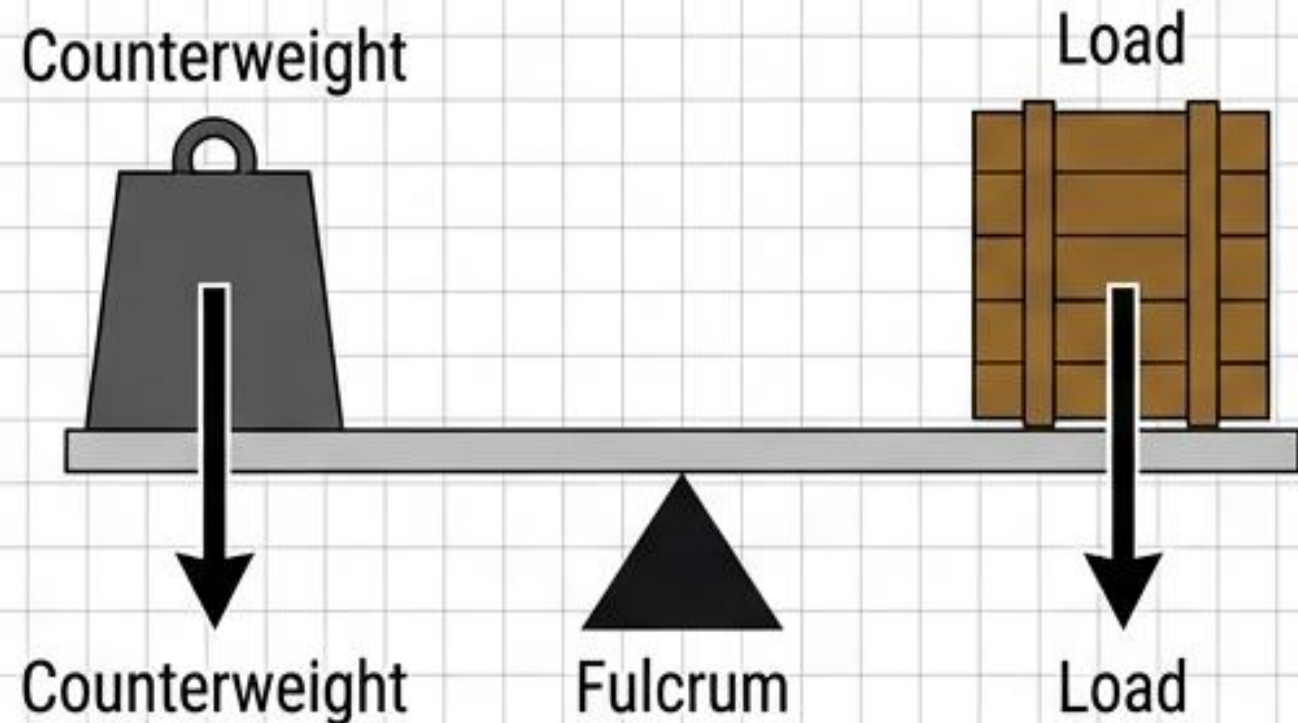
Hour Meter

THE PHYSICS OF STABILITY: FULCRUM AND COUNTERWEIGHT

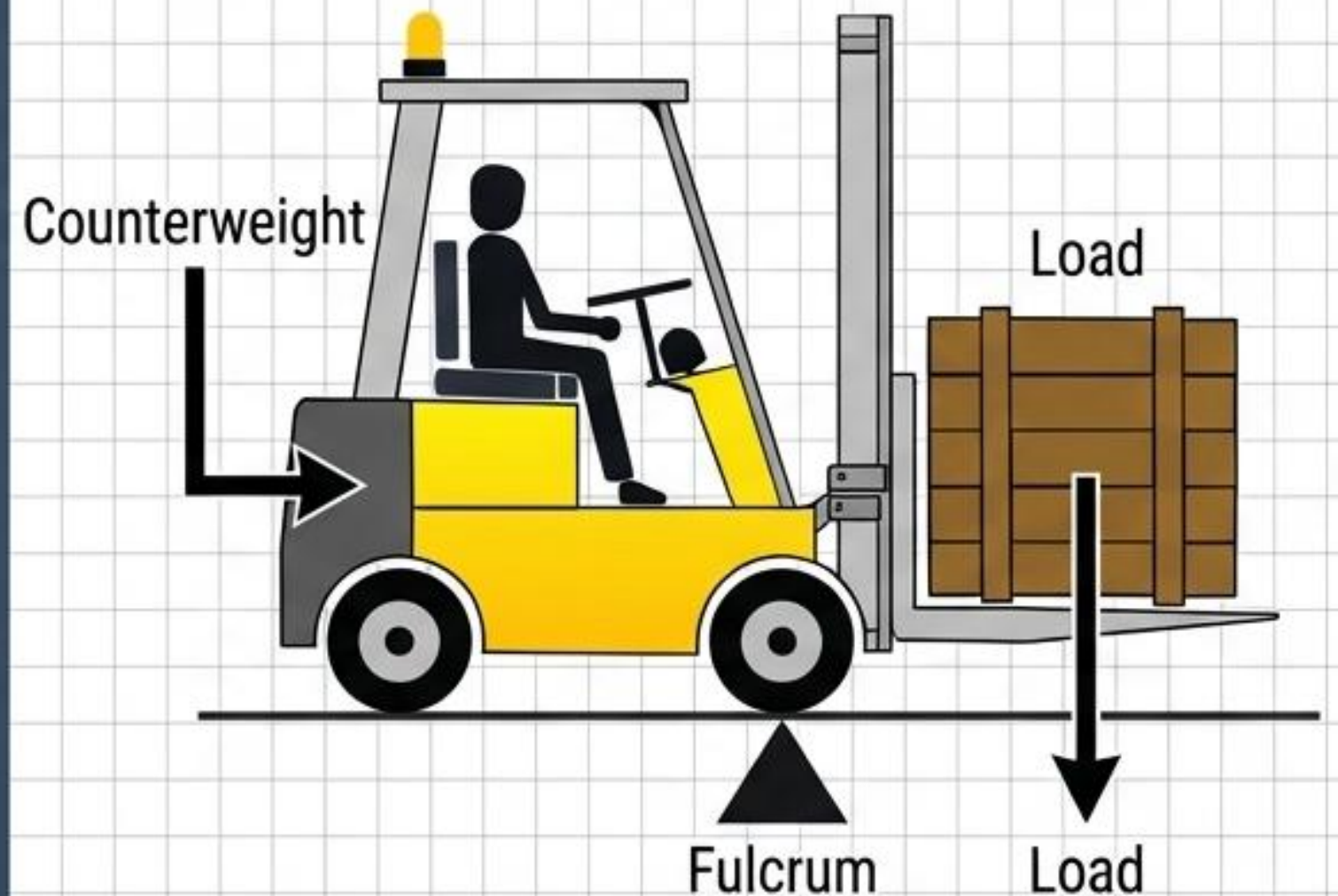
BALANCED LOAD = SAFE

UNBALANCED LOAD = TIP-OVER RISK

MINIMALIST PHYSICS DIAGRAM



FORKLIFT APPLICATION



Pre-Operation Protocol: Refueling & Recharging

Universal Rules

- ✓ Park only in designated areas.
- ✓ Never block emergency equipment.
- ✓ Turn off engine and lights.
- ✓ Ensure robust ventilation.
- ✓ Maintain access to nearby fire-fighting equipment.
- ✓ NO SMOKING.

Liquid/Gas Combustibles



- Do not spill fuel.
- Use only approved cans.
- For LP, completely shut off valves.
- Ensure immediate availability of spill kits.

Electric Powered



- Conduct safe battery recharging procedures.
- Only use designated plug-in zones.

GOLDEN RULES OF LOAD HANDLING

HEIGHT & TILT

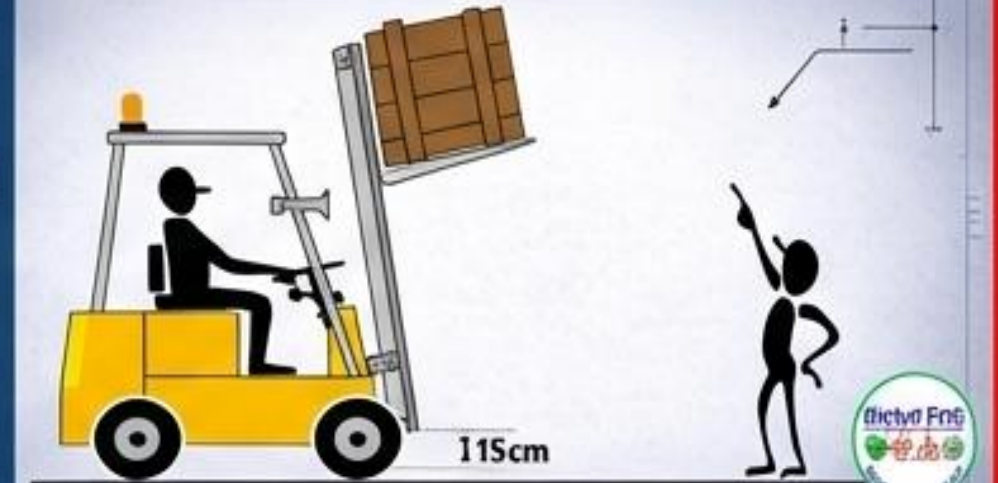
Drive with forks precisely **15 cm** from the ground with the mast tilted backward for maximum stability.



✔ MAINTAIN LOW FORK HEIGHT FOR BETTER STABILITY

NO ELEVATED TRAVEL

Strictly prohibited: driving with a lifted load to prevent tip-overs. Do not raise or lower loads while traveling.



✘ Elevated Loads Increase the Risk of Tipovers and Serious Injury

VISIBILITY

Avoid carrying loads that impair visibility. Utilize a spotter to guide the route when forward sightlines are blocked.



✔ GET A SPOTTER TO GUIDE YOU
IMPROVE SAFETY WHILE DRIVING

NAVIGATING SLOPES: THE ORIENTATION MATRIX

LOADED OPERATIONS



Keep load on the upslope side. Always drive with forks pointing toward the **HIGHEST** part of the slope.

UNLOADED OPERATIONS



Point forks downslope. Always drive with forks pointing toward the **LOWEST** part of the slope to maintain balance.



NEVER make a curve on a slope.
NEVER park on a slope. Drive slowly.

DRIVING DYNAMICS & MANEUVERING

DIRECTIONAL AWARENESS

Always look in the **direction** of your movement.



✓ DRIVING FORWARD



✓ DRIVING IN REVERSE

MOMENTUM CONTROL

Sudden braking causes extreme wear, catastrophic load shifts, and fatal tip-overs.



⚠️ AVOID HARD BRAKING AND SUDDEN CHANGES OF COURSE

SPATIAL AWARENESS: PEDESTRIANS & THE ENVIRONMENT



PEDESTRIAN HALOS



PEDESTRIAN HALOS

Maintain a defined safe distance from pedestrians, strictly acknowledging speed limits and blind spots.



CROSSINGS & ENTRANCES



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Stop, go slowly, and only proceed if the passage is clear before navigating any crossing or entrance.



AUDITORY WARNINGS



AUDITORY WARNINGS

Always blow your horn in dangerous places, dock edges, and blind spots to alert unseen foot traffic.

Hazard Prevention: Absolute 'Never's

No Passengers



Never transport any passengers. Severe risk of crushing injuries and falls. Never use forks to lift people.

Protect Infrastructure



Don't drive forklift over hoses or power leads. Prevents severed lines and cascading workplace accidents.

Suspended Loads



Never allow anyone to pass under a lifted load. Fatal risk from sudden hydraulic failure.

Proper Parking Protocol

STEP 1



Lower Forks

Lower the forks to the lowest possible position on the ground.

STEP 2



Apply Brake

Firmly apply the parking brake.

STEP 3



Power Off

Turn the engine completely off.



Always park in designated parking areas. NEVER park a forklift on a slope—it can roll causing serious injury.

Comprehensive Hazard & Inspection Audit

Operator Behavioral Risks

- ⚠ Excessive speed
- ⚠ Horseplay while operating
- ⚠ Driving with elevated loads
- ⚠ Unauthorized / untrained operators
- ⚠ Driving impaired (alcohol/drugs)
- ⚠ Operating with unsecured loads

Environmental & Spatial Risks

- ⚠ Pedestrian proximity & crossings
- ⚠ Blind spots around corners
- ⚠ Overhead obstructions
- ⚠ Dock and ramp edges
- ⚠ Poor road surface conditions
- ⚠ Improper load balance

Mechanical Inspection Points

- Seat belt & operator cabin
- Warning lights, horn & alarms
- Brakes & steering control
- Carriage, chains & forks integrity
- Hydraulic hoses & leak checks
- Tire condition & wear
- Structural nuts & bolts

Watch Full Videos in detail



Forklift Safety

Best Practices for Operators

Forklift Safety Training
Hazards, Rules & Safe Operation

[CLICK TO WATCH NOW](#)



FORKLIFT SAFETY INSPECTION CHECKLIST

Forklift Safety Inspection Checklist
Daily Forklift Inspection

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Make Safety the Standard



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