

1 Purpose	To outline the requirements for the safe operation, inspection, and servicing of forklifts.
2 Application	Applies to all NTPC employees and contractors required to operate forklifts.
3 Definitions	<p>Competent Worker A worker with the training, knowledge, and experience to perform specific work.</p> <p>Forklift A vehicle with a pronged device in front for lifting and carrying heavy loads.</p> <p>Qualified Worker A worker with the training, knowledge, experience, and recognized certification to perform specific work.</p>
4 References	<ul style="list-style-type: none"> • NWT Safety Act 1988 • NWT Occupational Health & Safety Regulations 2015 • CSA Standard B335-04: Safety Standards for Lift Trucks • SWP 2.09: Lead Acid Batteries • SWP 3.08: Working Near Energized Lines
5 Equipment	<ul style="list-style-type: none"> • Forklift
6 PPE	<ul style="list-style-type: none"> • CSA-approved Class E hard hat • CSA-approved foot protection • CSA approved safety glasses • NTPC high-visibility coveralls or high visibility vest
7 Training	<ul style="list-style-type: none"> • On-the-job training • Informed of any risk associated with, trained on, and deemed competent in, the inspection and safe operation of forklifts.
8 Work Practice	<p>Operators</p> <ul style="list-style-type: none"> • A forklift shall be operated only by a Competent Worker. <p>Forklift Operators <u>shall</u>:</p> <ul style="list-style-type: none"> • Know the recommended load limit of the forklift and shall not exceed it. • Know how to assess the weight of the load to be lifted. • Perform a visual and operational check of the forklift at the

start of the shift.

- Always inspect and wear any seat belt or operator restraint device/system when these devices are available on the forklift.
- Know how to properly enter and leave the vehicle.
- Look ahead for any obstructions or restrictions that might be in the path they are going to travel (e.g., slippery floors, items in the path, weight restrictions for floors, dock or bridge plates, elevators, etc.).
- Check for adequate overhead clearance before raising the load.
- Operate a forklift smoothly when stopping, starting, lifting, and tilting.
- Know the blind spots of the forklift with and without a load.
- Use corner mirrors, back-up alarms, buzzers, and warning lights to help prevent collisions.
- Keep pedestrians away from a forklift in operation. Operate with extreme caution when near pedestrians.
- Stop when anyone crosses the route being travelled. Lower the load to the floor and wait until clear.
- Operate at a safe speed, taking into consideration all conditions.
- If loading another vehicle (e.g., a transport truck), verify that the load wheels on the other vehicle are chocked and/or the emergency brake is applied.
- Ensure that the fire exits, stairways, and fire equipment are not blocked by the truck or the load.
- Wear fully laced safety boots to give impact protection when moving loads or skids and to provide ankle support when mounting and dismounting the forklift.
- Note anything that affects the normal operation of the forklift and tell the supervisor immediately.
- Keep hands, arms, head, feet, and legs inside the confines of a moving forklift.

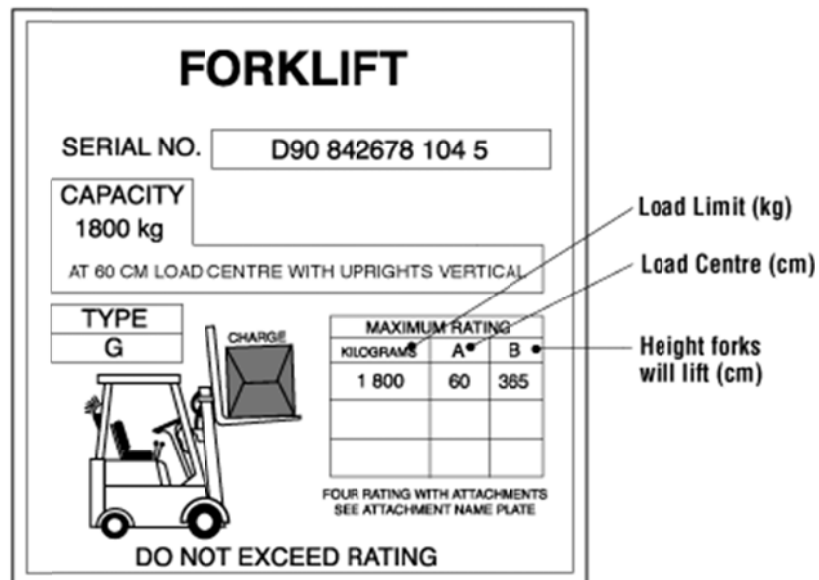
Forklift Operators shall not:

- Operate a forklift that does not have capacity rating information.
- Travel with the load raised more than 10 cm (4") from the floor.
- Leave the vehicle unattended while running or while loaded.
- Allow unauthorized persons to operate the vehicle.

- Try to manually move or adjust any part of the load, the forklift, or the surroundings while standing on the forklift.
- Lift a load that extends above the load backrest unless no part of the load can possibly slide back toward the operator.
- Allow anyone but the operator to ride on the forklift.
- Use pallets elevated by forklifts as an improvised working platform.
- Allow anyone to stand or walk under the elevated part of any forklift, whether loaded or unloaded.

Load Limit

- Do not exceed the recommended load limit of the forklift. Each forklift has a maximum load limit. The load limit is shown on the data plate of the forklift.



- Position the load according to the recommended load centre.
- The load limit of the forklift decreases as the load centre is raised.
- Do not add extra weight to counterbalance an overload.
- Operators shall keep loads close to the front wheels to keep the forklift stable.

Load Centre

- Keep the mast of the forklift in an upright position before inserting the forks into a pallet.
- Level the forks before inserting it into the pallet.
- Use forks that are at least two-thirds of the load length.
- Insert the forks fully under the load.
- Adjust the forks as wide as possible to fit the load and to provide a more even distribution of weight.
- Space the forks evenly from the centre stringer of the pallet to balance the load.
- Do not protrude the forks past the back of a pallet when stacking in tight areas.
- Space forks as widely as possible.
- Ensure that the load is secured before moving. If it is not, pile the load again or strap the load to the skid.
- Ensure that loads on pallets are stable, neat, cross-tied if possible, and evenly distributed.
- Remove damaged pallets from service.

Raising the Load

- Check that the overhead clearance is adequate before raising loads.
- Do not raise or lower the forks unless the forklift is stopped and brakes are applied.
- Lift loads straight up or slightly tilted back.
- The Operator shall stay on the forklift and attend the controls when the load is in a raised position.

Work Platforms

- Work platforms mounted on forklifts shall be
 - Secured to the fork carriage;
 - Fitted with guardrails, intermediate rails, and toe-boards on open sides, or be enclosed to a height of 107 cm (42"); and
 - Fitted with guards to protect the occupants from contact with the elevating machinery.
- No worker shall be transported on an elevated platform on a forklift. A worker may remain on a platform while small adjusting movements are made.

Maintain Control When Handling Pallets

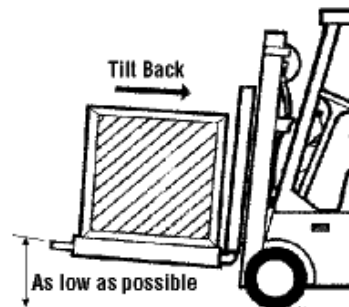
- Ensure that forks are:
 - Level.
 - High enough to go into the pallet.
 - Proper width to provide even distribution of the weight.
 - All the way under the load, reaching up to at least two-thirds of the load length.

Maintain Control When Lifting, Tilting, and Stacking a Load

- Lift the load straight until it is clear, then tilt back.
- Watch that the load does not catch on adjacent loads or obstructions.
- Do not raise or lower the forks until the forklift is stopped and the brakes are applied.
- Ensure that the forks are free of the load before backing up.

Maintain Control When Traveling

- Travel with forks as low as possible from the floor and tilted back (maximum 10 cm (4") above the floor).
- Match speed to driving, load, and workplace conditions.
- Decrease speed at all corners, sound horn, and watch the swing of both the rear of the forklift and the load.
- Watch for pedestrians.
- Avoid sudden stops.



- Travel in reverse when a load blocks vision and always look in the direction of travel.
- Check for adequate overhead clearance when entering an area or when raising the forks.
- Watch out for the hazards on the floor or roadway such as oil spots, wet spots, loose objects, holes, rough surfaces, people, and other vehicles.

- Maintain a safe working limit from all overhead power lines as per *SWP 3.08: Working Near Energized Lines*.
- Do not turn on ramps.
- Do not elevate the load when the forklift is on an incline.
- Have the load carried by the front wheels and turn with the rear wheels.
- Do not turn a forklift steering wheel sharply at fast speeds.
- Do not overload a forklift.
- Do not add extra weight to a counterweight to improve steering.

Maintain Control When Driving in Reverse

- Face the rear of the forklift.
- Sound horn before moving.
- Go slowly.
- Stop when vision is limited or blocked.

Maintain Control When Traveling Up or downhill

- Keep the forks pointed downhill without a load.
- Keep the forks pointed uphill with a load.
- Do not turn until on level ground.

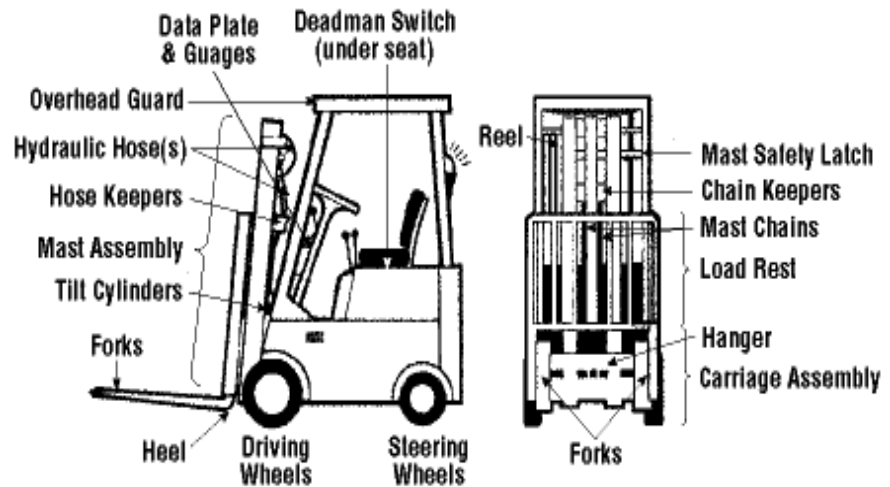
Parking the Forklift

- Secure forklift when left unattended.
- Park in an approved location.
- Set the brakes.
- Lower the forks or load to the floor.
- Neutralize the controls.
- Turn off the motor switch and remove the keys from the ignition.

Forklift Pre-use Check

- A forklift inspection shall be completed on a daily/shift basis by the first worker to use the vehicle that day or shift.
- The inspection shall include:
 - Forks not bent or cracked, positioning latches in good working condition, carriage teeth not broken, chipped, worn.

- Parking brake holds against slight acceleration.
- Steering moves smoothly.
- Lift mechanism operates smoothly (check by raising forks to maximum height then lowering forks completely).
- Tilt mechanism moves smoothly, holds (check by tilting mast all the way forward and backward).
- The inspection shall be documented on *Form 9.4: Heavy Equipment Inspection* as per *Health & Safety Management System Element 09: Health & Safety Inspections*.
- Any fault or deficiency detected with any aspect of the forklift shall be reported to the manager immediately.
- If a fault or deficiency is likely to cause injury or damage the forklift shall be tagged and removed from service immediately until such time as the deficiency is repaired.

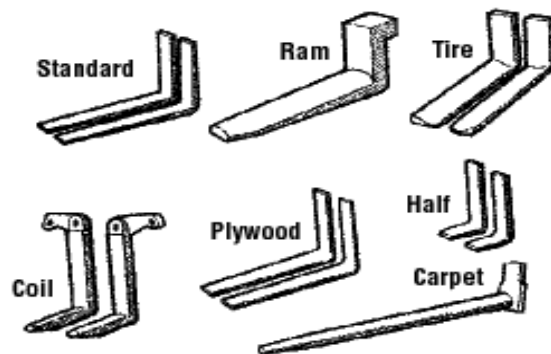


Inspection

- A thorough inspection of the forks shall be performed every six months, by a trained individual (i.e., a mechanic), to check for any cracks and distortion. Forks may need inspections more often, depending on the use of the equipment.
 - Check fork blades for wear. Forks are constantly subjected to abrasion by concrete floors, steel shelving, etc. This abrasion can reduce the thickness of a fork until it cannot lift loads up to the designed capacity.
 - Check for distortion. Forks can be bent out of shape. Depending on distortion, some forks can be

straightened. The fork manufacturer is best qualified to correct this.

- Check for cracks in heel and hanger. Cracks may appear on forks where attachments are welded on or in the inside radius of the bend area. Periodic inspection using a magnetic particle or dye penetrant test can detect cracks. Approved grinding methods may grind out and polish these blemishes, depending on the depth of the crack. Contact the forklift supplier or manufacturer for additional information.
- Replace forks, when necessary, with good quality forks – either forged forks or ones with an upset heel.
- Use the proper forks. Custom-designed forks may be needed for:
 - Unusual lifting conditions.
 - Spark-free areas.
 - High heat furnace areas.
 - Special object lifting.
- Contact the forklift supplier for assistance.



Servicing a Forklift

- Only Qualified Workers shall service and maintain forklifts.
- Appropriate PPE shall be worn when servicing a forklift.
- Disconnect all batteries before doing any work as per *SWP 2.09: Lead Acid Batteries*.
- Before servicing propane forklifts:
 - Shut off the tank fuel valve.
 - Run the engine until it stops.
 - Disconnect the tank from the hose.
- Block the forklift securely when removing wheels.
- Support the forklift hood in an upright position or remove to

do work.

- Keep the work area clean and well lit.
- Clean spilled oil or hydraulic fluid immediately.
- Check all tools before using.
- Remove all tools and parts before starting the engine.
- Handle batteries with care.
- Avoid contact with battery terminals with hoisting chains, tools and metal objects.
- Cover the battery top with some insulating material.
- Attach a chain hoist to the counterweight before removing it from a forklift.
- Check the bolts holding the counterweight to the body and replace any worn or missing bolts.
- Find out why a forklift is in for repairs before starting or driving it.
- Check the operator's daily checklist (*Form 9.4: Heavy Equipment Inspection*) before making repairs.
- Inspect by magnetic particle testing the main mast welds and forks annually or when cracks appear.
- Inspect by magnetic particle testing all hoses, couplings, fittings, and connections to the cylinders in the main mast assembly and the tilt control system.
- Inspect forks for distorted, twisted, or bent sections. If defects are found, test the area of concern.
- Do not leave parts, creepers, cans, tools, or other obstacles around.
- Do not lift beyond your capacity. Use hoist or leverage tools to lift or move heavy parts or equipment.
- Do not smoke, weld, or light a match around refueling and battery-charging areas.
- Do not start a forklift if it is on a lift hoist or wheel stands.
- Do not work on forklift attachments unless familiar with their operation.
- Do not work beneath elevated forklifts or forks unless they are securely supported by approved blocks.
- Do not run propane, gas, or diesel forklifts in unventilated areas

Handling Propane Fuel

- Position the tank so the liquid propane does not come in contact with the relief valve.

- Make sure the locking pin engages into the cylinder.
- Make sure the valve is closed tightly.
- Store the cylinder outside, in an upright position, in an area where it can be secured and is protected from being struck.
- Put the cylinder down gently. Do not drop, dent, or damage.
- Always protect the valve from any damage.
- Avoid contact with liquid propane, as it can cause frostbite.
- Wear protective gloves while making or breaking connections.
- Ensure that only qualified persons repair carburetors and fuel supply systems.
- For repairs, use only approved components.
- Exchange removable cylinders outdoors or in well-ventilated areas, away from all sources of ignition.
- Close the valve before breaking connections.

Changing Propane Tanks

- Procedure for changing propane cylinders:
 - Wear eye protection and insulated, loose fitting dry gloves such as leather or insulated neoprene.
 - Close the valve on the cylinder.
 - Run the engine until it stops. This ensures that the connection hose is empty.
 - Shut off the engine.
 - Open the connecting nut and inspect valves for leaking. Do NOT use metal tools.
 - Disconnect the hose.
 - Disconnect the holding straps.
 - Remove the empty cylinder.
 - Replace with a full cylinder in the proper position.
 - Connect the holding straps.
 - Tighten the connecting nut (wiggle hose).
 - Open the valve on the cylinder slowly and check for leaks. Use a solution of soap and water. Smell, listen, look.
 - If the valve leaks:
 - 1st time – tighten the nut and continue.
 - 2nd time – change the cylinder.
 - 3rd time – change the hose.

	<ul style="list-style-type: none"> ○ Open the valve fully (slowly). ○ Check that the hose is turned inward. ○ Secure the hose downward. ○ Secure the cylinder. ○ Start the engine and resume operation. ● Do not use metal tools when changing a cylinder. ● Do not use excessive force when opening valve. ● Do not let the cylinder get too hot. ● Do not drag, drop, roll or slide cylinder or allow it to bang against other objects. ● Do not use matches or a flame to check for leaks. Use soap or a leak detector. ● Do not mount more than two propane cylinders on any forklift. <p>Forklift Batteries</p> <ul style="list-style-type: none"> ● Read and follow the safe work practices outlined in <i>SWP 2.09: Lead Acid Batteries</i>.
9 Documentation	<ul style="list-style-type: none"> ● Operator licence ● Form 9.4: Heavy Equipment Inspection

Development		
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Reviewed by: A. Crowther	Health & Safety Coordinator	Feb. 26, 2016
Approved by: E. Smith	Director, Health, Safety & Environment	Jun. 13, 2016

Revision History					
#	Revised Sections	Description of Revisions	Revised by (name, position)	Approved by (name, position)	Issue Date
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