



RISK ASSESSMENT

For

HANGCHA GAS Forklift



Version 3

CONTENTS

Standards referenced in the preparation of this document

Risk Assessment (3 pages)

APPLICABILITY

The following Risk Assessment document is applicable to the following models of Hangcha Forklift Trucks –

CPQYD35-XW22F

CPQYD18-XW21F

STANDARDS REFERENCED

The following Standards, Acts and Regulations were referenced in the preparation of this Risk

- NOHSC: 1010 (1994) - National Standard for Plant
- AS2359.6 (1995) – Powered Industrial Trucks – Safety Code
- AS4360 (2004) – Risk Management
 - OHS Act 2000
 - OHS Regulation 2001
- ISO/WD 3691-1 (1999) – Industrial Trucks – Safety Requirements and Verification • EN1459
 - (1999) – Safety of Industrial Trucks

RISK ASSESSMENT - Forklift Truck – 1.8/3.5 Ton Gas Forklift

HAZARD		RISK	LEVEL	CONTROL
		Detail		
1. Suitability of the type of plant for the particular task				
1.1	Overload forklift causing tip over	Strike injury	Low	Rating Plate checked by Licensed Operator re: O&M Manual.
1.2	Object falling off tynes	Strike injury to bystander	Medium	Follow loading and unloading procedures re: O&M Manual.
1.3	Incorrect stacking causing load loss	Load loss - strike injury to bystander	Medium	Follow loading and unloading procedures re: O&M Manual.
1.4	Attachment too heavy for forklift	Instability - tip over - crush injury	Low	Rating Plate checked by Licensed Operator re: O&M Manual.
1.5	Workplace not designed for forklift use (mix with bystander)	Bystander death or injury	High	Workplace Hazard Analysis to identify and mitigate
1.6	Untrained in operation and safe work procedures	Operator or bystander death or injury	High	All operators of this forklift require forklift licence - otherwise breach of OHS Act
2. Actual and intended use in the workplace				
2.1	Workplace not designed for forklift use (mix with bystander)	Bystander death or injury	High	Workplace Hazard Analysis to identify and mitigate
2.2	Operating fork truck near loading docks or wharves	Fork truck falls a distance - crush injury	Medium	Workplace Hazard Analysis to identify and mitigate
2.3	Floor unable to support fork truck	Fork truck falls through floor	Medium	Workplace Hazard Analysis to identify and mitigate
2.4	Bystander injury due to impact with forklift	Bystander crush injury	Medium	Be wary of bystanders, use horn & flashing lights where necessary re: O&M Manual.
2.5	Poor work method/practices	Operator or bystander death	Medium	OHS Acts require all operators to be trained in correct practices
2.6	Untrained in operation and safe work procedures	Operator or bystander death or injury	High	All operators of this forklift require forklift licence - otherwise breach of OHS Act
3. Environmental conditions and terrain in which plant is used				
3.1	Hit head on overhead guard due to bumpy roads	Operator impact injury	Low	Do not operate in rough conditions. If necessary, drive slowly and wear hard hat - do Risk Assessme
3.2	Tip over due to travelling on gradients incorrectly	Tip over causing operator crush injury	High	Follow proper procedures for travelling on slope re: O&M Manual.
3.3	Tip over due to turn on gradients unsafely	Tip over cause operator crush injury	Medium	Do not turn on an incline re: O&M Manual.
3.4	Continual noise (8 hrs per day for extended periods)	Hearing impairment	Medium	Fork truck less than 80 dB at Operators ear - complies with Australian standard.
3.5	Build-up of exhaust gases in restricted workspace operation	Bystander overcome by fumes	Medium	Workplace Hazard Analysis to identify and mitigate-purifiers available
4. Foreseeable abnormal situations, misuse and fluctuation of operating conditions				
4.1	Tip over due to very low tyre pressure/sharp turn	Operator crush injury	Medium	Maintain tyre pressure at optimum level re: O&M Manual.
4.2	Tip over due to sharp turn at speed and/or with mast high	Operator crush injury	Medium	Ensure mast is lowered when travelling and turn slowly.
4.3	Tip forward due to travel with mast high (then braking)	Operator strike injury	Low	Lower mast and depress brake pedal slowly re: O&M Manual.
4.4	Hit head on overhead guard due to bumpy roads	Operator impact injury	Low	Do not operate in rough conditions. If necessary, drive slowly and wear hard hat - do Risk Assessme
4.5	Brake fluid reservoir leak	Slippery conditions-operator bone injury	Low	Conduct daily inspection re: O&M Manual.
4.6	Tip over due to travelling on gradients incorrectly	Tip over causing operator crush injury	Medium	Follow proper procedures for travelling on slope re: O&M Manual.
4.7	Tip over due to turn on gradients unsafely	Tip over cause operator crush injury	Medium	Do not turn on an incline re: O&M Manual.
4.8	Operator falls out of seat during tip over	Crush injury	Low	In case of tip-over, hold on to steering wheel, stay on the truck & brace feet re: O&M Manual.
5. Potential for injury due to entanglement, crushing, trapping, cutting, stabbing, puncturing, shearing, abrasion, tearing and stretching:				
5.1	Run over whilst getting out of moving truck	Operator crush injury	Medium	Ensure forklift is in parking position before getting on & off.
5.2	Bystander run over	Bystander crush injury	Medium	Be wary of bystanders, use horn & flashing lights where necessary re: O&M Manual.
5.3	Bystander riding on fork truck	Bystander fall and injury received	Low	Do not allow anyone on any part of fork truck while moving or lifting.
5.4	Bystander hit with forks or tail of forklift	Bystander strike injury	Medium	Be wary of bystanders, use horn & flashing lights re: O&M Manual.
5.5	Hood falls down whilst checking under hood	Crush injury to arm/hand	Low	If hood is opened, ensure it is opened to full upright position.
5.6	Hand caught in radiator fan cowling	Severe hand tear injury	Low	Follow proper maintenance procedures & safety cautions re: O&M Manual.
5.7	Finger catches in accelerator spring	Minor finger/hand abrasion	Low	Follow proper maintenance procedures & safety cautions re: O&M Manual.
5.8	LP gas bottle clips catch on hand/fingers	Minor finger/hand abrasion	Low	Follow proper maintenance procedures & safety cautions re: O&M Manual.
5.9	Manual handling injury lifting LPG bottle down to ground	Back injury	Medium	Follow proper LPG cylinder replacement procedures re: O&M Manual.
5.10	Foot injury from LPG gas bottle falling on foot	Foot injury	Medium	Follow proper LPG cylinder replacement procedures re: O&M Manual.
5.11	Hand catches in mast rollers	Severe hand crush injury	Medium	Follow proper LPG cylinder replacement procedures re: O&M Manual.
5.12	Slip/fall getting out of forklift	Slip over due to mis-footing	Medium	Follow proper procedures for getting on and off forklift re: O&M Manual.
5.13	Fingers caught in tilt ram	Finger crushing injury	Low	Operate forklift only from designated operator's position re: O&M Manual.

5.14	Hand crushed against steering wheel on hood close	Hand crushing injury	Low	On hood close, push down from the top of the hood. Exercise caution.
Risk Assessment - Forklift Truck				
5.15	Arm or leg caught in side shift cylinder	Shearing injury	Low	Operate forklift only from designated operator's position re: O&M Manual.
5.16	Loose clothing	Clothing catches in moving parts - injure	Medium	Do not wear a necktie, scarf or loose clothing when operating forklift re: O&M Manual.
5.17	Obstruction of view	Load too high, runover bystander	Medium	Adjust load or travel with load trailing & keep proper lookout in travel direction re: O&M Manual.
5.18	Greasy hands whilst operating fork truck	Hands slip on steer wheel, hit bystander	Medium	Never operate with wet or oily hands.
5.19	General entanglement whilst using FLT not from op seat	Injury due to not operating from operators' seat	High	Operate forklift only from designated operator's position re: O&M Manual.
5.20	Trip on tynes due to tynes not lowered at end of operation	Trip injury to operator or bystander	Medium	When parking, ensure mast is in upright position & fork carriage lowered to the ground.
5.21	Inadequate lighting causing impact with bystander	Bystander crush injury	Low	Work lights provided on all fork trucks
6. Generation of hazardous conditions, due to pressurised content, electricity, noise, radiation, friction, vibration, fire, explosion, temperature, moisture, vapour, gases, dust, ice, hot or cold parts				
6.1	Overmast hose failure	Burns due to hot fluid	Medium	Conduct daily inspection re: O&M Manual. Only authorised hoses to be used.
6.2	Overmast hose failure	Eye injury as fluid splashes into eyes	Medium	Conduct daily inspection re: O&M Manual. Only authorised hoses to be used.
6.3	Overmast hose failure	Fluid causes slip hazard	Low	Conduct daily inspection re: O&M Manual. Only authorised hoses to be used.
6.4	LP gas hose leak catching fire	Burns occurring	Medium	Conduct daily inspection re: O&M Manual. Only authorised hoses to be used.
6.5	Battery explosion	Chemical burns	Low	Conduct daily inspection re: O&M Manual. Battery enclosed under hood - out of way.
6.6	Radiator cap being removed under pressure	Burns due to hot fluid	Low	Never open radiator cap when engine is hot re: O&M Manual.
6.7	Radiator cap being removed under pressure	Eye injury as fluid splashes into eyes	Low	Never open radiator cap when engine is hot re: O&M Manual.
6.8	Continual noise (8 hrs per day for extended periods)	Hearing impairment	Medium	Fork truck less than 80 dB at Operators ear - complies with Australian standard.
6.9	Vibration (continuous use)	Back/joint injury over time	Medium	Industrial cushion seat used. Suspension seat available
6.10	Rain causing slippery operating conditions	Slip off forklift when exiting	Low	Foot step has non-slip tread
6.11	Rain causing slippery operating conditions-lose traction	Slide into pedestrian - injure	Medium	Workplace Hazard Analysis to identify and mitigate
6.12	Inhaling exhaust fumes whilst manipulating tow pin	Intoxication due to overexpose of CO	Low	Turn off ignition when manipulating tow pin.
6.13	Smoking whilst refuelling/changing LPG gas bottles	Fire/explosion burns to Operator	Medium	Do not refuel machine while smoking or when near open flame or sparks.
6.14	Tow cable snap when towing fork truck	Bystander injury due to flaying cable	Low	Conduct daily inspection re: O&M Manual. Ensure cable is replaced by authorised repair person.
6.15	Build-up of exhaust gases in restricted workspace operation	Bystander overcome by fumes	Medium	Workplace Hazard Analysis to identify and mitigate-purifiers available
7. Failure of the plant resulting in the loss of contents, loss of load, unintended ejection of work pieces, explosion, fragmentation or collapse of parts				
7.1	Lift chain/mast failure causes load loss	Strike injury to bystander	Medium	Conduct daily inspection re: O&M Manual. Check for cracks, broken links & adjustments.
7.2	Tyne failure causes load loss	Strike injury to bystander	Medium	Conduct daily inspection re: O&M Manual. Check fork position is proper and hanger securely locked
7.3	Tyne's not secured and move apart - load loss	Strike injury to bystander	Medium	Conduct daily inspection re: O&M Manual. Check fork position is proper and hanger securely locked
7.4	Load spears through overhead guard/load backrest	Operator stab injury - severe	Medium	Workplace Hazard Analysis to identify and mitigate
8. Capability of the plant to lift and move people, equipment and materials and suitability of secondary back-up system to support the load				
8.1	Overload forklift causing tip over	Strike injury	Low	Rating Plate checked by Licensed Operator re: O&M Manual.
8.2	Slabbing of counterweight	Overload fork truck, load loss, injure bystander	Low	Unauthorised modification of counterweight is not permitted.
9. Control systems, including guarding and communications systems				
9.1	Steering control failure	Bystander impacted - injury	Medium	Reduce speed in enclosed areas. Flashing light available.
9.2	Hydraulic control failure - leak fluid	Fluid causes slip hazard	Medium	Clean up all spills re: O&M Manual.
9.3	Overhead guard failure	Operator crush/strike injury	Medium	Workplace Hazard Analysis - Machine should not be operated in such conditions.
10. Potential for falling objects and the plant roll over				
10.1	Object falling off tynes	Strike injury to bystander	Medium	Follow loading and unloading procedures re: O&M Manual.
10.2	Machine rollover	Operator crush/strike injury	Medium	Follow proper operating instructions & safety precautions re: O&M Manual
10.3	LPG gas bottle falls on foot when being removed	Operator strike injury	Medium	Follow proper LPG cylinder replacement procedures re: O&M Manual.
10.4	Mast tilted forward when carrying load	Load loss - strike injury to bystander	Medium	Do not tilt the mast forward under loaded condition re: O&M Manual.
10.5	Incorrect stacking causing load loss	Load loss - strike injury to bystander	Medium	Follow loading and unloading procedures re: O&M Manual.
10.6	Stack load on one fork - load loss	Load loss - strike injury to bystander	Medium	Follow loading and unloading procedures re: O&M Manual.
11. Suitability of materials used for the plant				
11.1	Insufficient strength in materials	General failure-strike injury	Low	Designed by engineers under ISO 9001 accreditation

11.2	Petrochemicals used for lubrication	Poisoning of skin (maintenance staff)	Low	Materials Safety Data Sheets available
11.3	Non-spark proof design used in explosive zones	Operator and bystander death	Low	Machine not designed for such purposes

12. Suitability and conditions of all accessories

12.1	Attachment too heavy for forklift	Instability – tip over - crush injury	Low	Rating Plate checked by Licensed Operator re: O&M Manual.
12.2	Attachment not maintained - failure	Load loss - bystander strike injury	Low	Conduct daily inspection of attachment for any abnormalities.

13. Ergonomic needs relating to installation and use

13.1	Steering wheel and seat configuration	Operator back strain	Low	Seat & Steering wheel adjustable to preferred position re: O&M Manual
13.2	Lifting LPG gas bottle down	Operator back strain	Medium	Follow proper LPG cylinder replacement procedures re: O&M Manual.

14. Carrying out the work without the plant

14.1	Manual handling injury by not using forklift	Lifting heavy load - permanent injury	High	Use appropriate materials handling equipment - forklift if necessary
14.2	Utilise other plant (inappropriate for task)	Plant not suitable for task-injury	High	Use appropriate materials handling equipment - forklift if necessary

15. Location in the workplace and the impact on workplace design and layout

15.1	Workplace not designed for forklift use (mix with bystander)	Bystander death or injury	High	Workplace Hazard Analysis to identify and mitigate
15.2	Operating fork truck near loading docks or wharves	Fork truck falls a distance - crush injury	Medium	Workplace Hazard Analysis to identify and mitigate

16. Suitability and stability of the plant and supports

16.1	Structure collapse	Operator or bystander crush injury	Low	Overhead guard built to international standards. Any operation beyond needs new risk assessment
16.2	Floor unable to support fork truck	Fork truck falls through floor	Medium	Workplace Hazard Analysis to identify and mitigate

17. Presence of persons and other plant in the vicinity

17.1	Bystander injury due to impact with forklift	Bystander crush injury	Medium	Be wary of bystanders, use horn & flashing lights where necessary re: O&M Manual.
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18. Potential for inadvertent movement or operation of the plant

18.1	Grab incorrect lever-load loss	Load loss - strike injury to bystander	Medium	Lever ergonomically designed. Bystanders should not be close by when loading & unloading.
18.2	Inadvertently operate wrong lever-load loss	Load loss - strike injury to bystander	Medium	Operator is required to be aware of the correct operation of fork truck
18.3	Inadvertently accelerate-injury to bystander	Bystander crush injury	Medium	Pedal layout ergonomically designed, also spring return (i.e., remove foot)
18.4	Unauthorised use - death of operator or bystander	Person untrained in safe work-death	Low	Key start. Key must be removed to secure the forklift.

19. Systems of work associated with the plant

19.1	Poor work method/practices	Operator or bystander death	Medium	OHS Acts require all operators to be trained in correct practices
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20. Access and egress

20.1	Fall out of machine on egress	Misplace foot - slip out	Medium	Foot step has non-slip tread.
20.2	Head injury on access and egress	Hitting head on overhead guard	Medium	Follow correct entry & exit procedures re: O&M Manual.
20.3	Impact injury when accessing forklift	Strike knee when entering	Medium	Follow correct entry & exit procedures re: O&M Manual.
20.4	Catch foot in foot hole for access	Foot injury	Medium	Foot step large enough for even above average foot size.
20.5	Hit levers on access - load loss	Bystander crush injury	Medium	Follow correct entry & exit procedures re: O&M Manual.

21. Competency of operators

21.1	Untrained in operation and safe work procedures	Operator or bystander death or injury	High	All operators of this forklift require forklift licence - otherwise breach of OHS Act
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Hierarchy of Control

1. Elimination
2. Substitution
3. Isolation
4. Engineering Control
5. Administrative Control
6. PPE
7. Risk scores listed as HIGH need action taken to minimise the risk.