

Quikstak 'smart-stacker'



INSTRUCTION HANDBOOK



KEEP THIS BOOKLET WITH THE MACHINE FOR READY REFERENCE

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Introducing....

Quikstak 'smart-stackers'

Welcome to the new levels of efficiency and back care afforded by the **Quikstak** 'smart-stacker'. To ensure that you get the maximum benefit from your 'smart-stacker', please carefully read through this booklet and familiarise yourself with the various controls and features before using the machine.

The **Quikstak** 'smart-stacker' is a battery-powered mini-forklift, with unique features designed to **reduce back injuries** and **improve productivity** in manual loading/unloading operations. Most **Quikstak** stackers have an adjustable infra-red sensor mounted inside, which signals the forks to raise or lower as product is removed or added, thus **maintaining a constant working level** for the operator.

Every effort has been made to ensure that the **Quikstak** is easy and safe to use, economical to operate and able to give years of hard work with minimal maintenance.

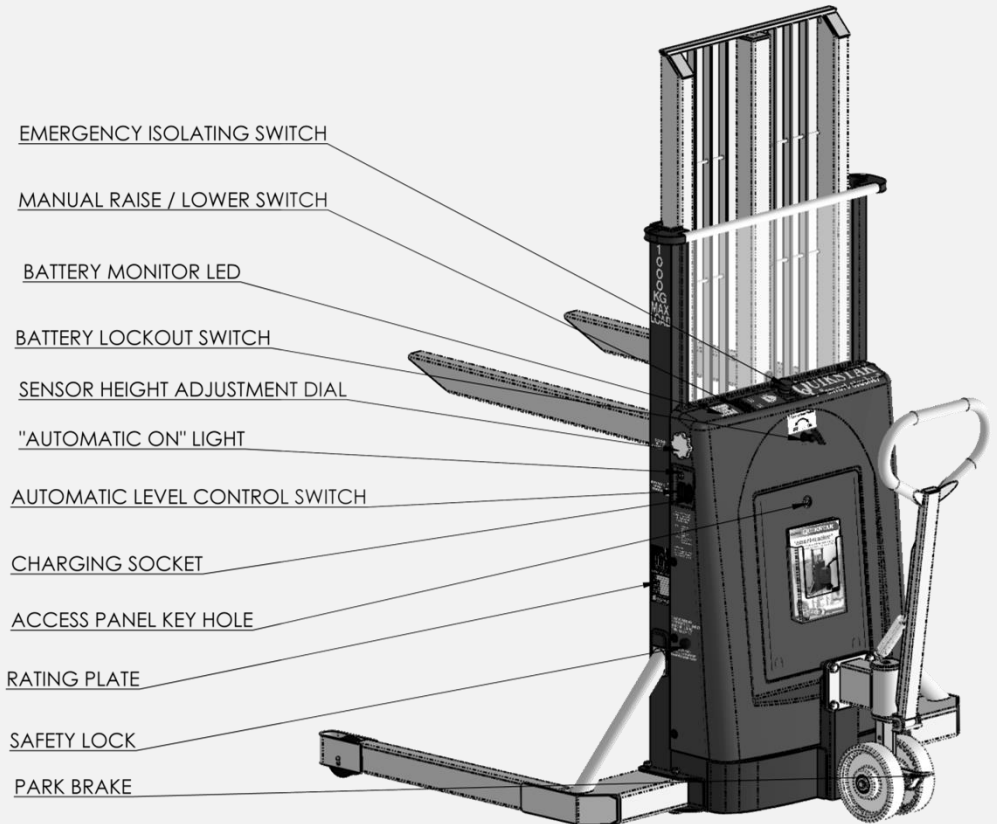
For example, all steel components are zinc-plated prior to assembly, custom-made heavy-duty wheels allow full loads to be moved with little effort, and recharging the batteries is the only regular task required.

This manual covers only standard models of the **Quikstak** range. Other models are covered by their appropriate manuals.

These include:

- Self-propelled **Quikstak**, with electronic variable speed, for effortless movement of heavy loads over long distances.
- Compressed air powered **Quikstak** for use in hazardous areas.
- Custom-built versions for specific applications. Options available include higher lift, 2-stage masts, increased weight capacity, hand pumped models and basic stackers.

Location of Controls



Operation and Function of the Controls

Referring to the accompanying diagram, identify and familiarise yourself with the operation of the various switches and controls.

➤ **BATTERY MASTER SWITCH:**

This switch completely disconnects the batteries from the machine. It is for emergency use only, and should not be turned off during charging.

➤ **EMERGENCY ISOLATING SWITCH:**

Pressing this switch cuts off the power to the control circuit, stopping the forks from raising or lowering. Turn the button clockwise to reset.

➤ **MANUAL RAISE / LOWER SWITCH:**

This switch has 3 positions – UP/OFF/DOWN. It returns to the 'OFF' position when released.

➤ **SENSOR HEIGHT ADJUSTMENT DIAL:**

Turning this dial clockwise raises the sensor and thus the working level; one full turn covers the full 250mm adjustment range.

➤ **SENSOR RANGE ADJUSTMENT:** (See page 5)

A small screw on top of sensor unit adjusts the horizontal detection range of the sensor from 0-700mm.

➤ **AUTOMATIC LEVEL CONTROL SWITCH:**

This switch has 3 positions – AUTO-UP/OFF/AUTO-DOWN. The red LED above it glows when the switch is on.

➤ **CHARGING SOCKET:**

Plug the lead supplied into this socket and into a 240v outlet. For detailed charging instructions refer to the section on page 8.

➤ **PARK BRAKE:**

Always engage while loading or unloading. Press the pedal down to release it, and flick it up to lock the wheels.

OPERATING INSTRUCTIONS

STACKING PRODUCT ONTO A PALLET

1. Pick up an empty pallet with the forks and place the **Quikstak** in a suitable position, bearing in mind whether you will be loading from the front or side, or both. Apply the park brake.

2. Turn the sensor Adjustment Dial fully clockwise so the height sensor is at its maximum height.

3. Select 'AUTO-UP' by pressing the top of the Auto Level switch. The pallet will rise to approximately 1 metre above the floor level. Then select 'AUTO-DOWN' by pressing the bottom of the Auto Level switch.

4. Place the first carton of package immediately in front of the sensor. The pallet will drop until the sensor 'sees' the top of the carton. Finish stacking this layer, then place the first item of the next layer in front of the sensor. Repeat one layer at a time, until complete.

5. If necessary, use the Sensor Adjustment Dial to reduce the working height to a more comfortable level. In some cases, you may be able to set the working height to just a little lower than the feed conveyor, and slide the cartons onto the stack, entirely eliminating the need to lift.

6. A safety cut-out switch stops the pallet sufficiently above floor level to prevent the operator's feet being trapped. The Manual switch must be used to lower the load fully to the floor.

7. When supplied, the sensor's horizontal range is normally set to a maximum detection range of 700mm. In some cases, it is advisable to reduce this range to just beyond the fork backplate. To reduce the range, lower the sensor fully and using a small flat-bladed screwdriver, turn the screw on top of the sensor anti-clockwise. Check the range using sample product. (Note that white or light coloured objects are more easily detected than dark objects). The main reasons for reducing the range are:

- To prevent the operator's hands triggering the sensor while completing a layer; or
- Where slats of timber are being stacked and each piece is used to push the previous pieces nearer the backplate until the layer is complete.

REMOVING PRODUCT FROM A STACK

1. Pick up the pallet and put the **Quikstak** in a suitable position. Apply the park brake.
2. Select 'AUTO-UP' by pressing the top of the Automatic switch.
3. If the load is higher than 1 metre, it will not rise until one or more layers of product have been removed. When the top of the stack is below the sensor height, the load will be automatically raised to the same preset level.
4. Generally speaking, the last item removed from each level should be the one immediately in front of the sensor.
5. Adjust the working level if required, by turning the Sensor Adjustment Dial.

WHEN FINISHED, RETURN THE AUTOMATIC SWITCH TO THE 'OFF' POSITION.



RECHARGING THE BATTERIES

A standard **Quikstak** has two deep cycle 12 volt gel batteries and a built-in automatic charger. Charging frequency depends on the type of work being done.

Raising full pallets requires considerably more energy than merely lowering as product is stacked on the pallet. Generally, a full charge should enable at least 80 1-tonne pallets to be unloaded, or several hundred pallets to be loaded, using the AUTO-DOWN mode.

The charger automatically goes into 'float' mode when the batteries are charged, so the stacker may be left on charge for extended periods without harming the batteries. The type of batteries fitted to a **Quikstak** give the best service and maximum overall life if they are recharged frequently.

RECOMMENDED PROCEDURE FOR RECHARGING THE BATTERIES

1. Apply the parking brake
2. Connect the charging lead into the charging socket on the side of the machine and then into a 240 volt outlet.
3. The charger is fully automatic and can be safely left connected over weekends or every night without damaging the batteries.
4. Unless the batteries are very flat, a full recharge will take around 15 hours.
5. Machines manufactured after mid-2009 may be used while charging; the circuit on earlier machines did not allow this.

Please also refer to the notes on pages 12 and 16.

BATTERY CHARGE STATUS LED

The battery charge status LED has 3 states:

- Green – The machine is OK to use
- Red, steady – The batteries should be recharged as soon as possible.
- Red, flashing – The batteries should be recharged immediately.

Once the LED has turned to red, it will stay red until the batteries reach approximately 90% of full charge, then change back to green. Although the machine may be used at this point, we recommend that the charger be left plugged in for at least a further hour after the LED turns green, to ensure that the batteries receive a full charge.

The approximate charge levels indicated when the LED changes state are shown below:

FROM:		TO:	Battery status
Green	➔	Red Steady	50%
Red Steady	➔	Red Flashing	30%
Red Flashing	➔	Red Steady	40%
Red Steady	➔	Green	95%

NOTE: Maximum battery life will be attained by frequent recharging; allowing the batteries to deeply discharge before recharging will greatly shorten their life.

BATTERY LIFE

Even with regular maintenance and charging, batteries do have a limited life. Deep-cycle gel batteries can give up to five years service before needing replacement, and require no maintenance whatever during that time. Ensure the top of the batteries is kept clean and dry.

MAINTENANCE AND CARE OF THE QUIKSTAK

The **Quikstak** has been designed to give years of service with minimal maintenance. With a little care and common sense, it should retain its 'new look' for a long time.

An occasional coat of silicon spray inside the masts will keep the forks running smoothly and minimize wear of the self-lubricating Nylon mast blocks.

The lenses of the sensor should be kept clean.

All metal parts of the **Quikstak** are zinc-plated before painting and assembly. The fibreglass cover has a very hard outer surface designed to be hard wearing, and the clear safety screen is unbreakable polycarbonate sheet. To keep your **Quikstak** looking like new, we recommend an occasional wipe over with a damp rag and a mild cleaning agent.

FORK HEIGHT ADJUSTMENT

The forks are fitted with a 'stop bolt', which determines the height above the floor at which they rest when right down. If you are experiencing difficulty pushing the forks into a pallet, the height may need adjusting. When the forks are right down, check to see whether they are touching the top boards, or the bottom boards, or both. (The forks do normally have an upward tilt with no load, and come down level with a full load. The amount of tilt can be simply reduced if necessary. Please contact Simpro or your agent)

The stop bolt is threaded into the steel angle section between the forks, just beside the centre upright member. To adjust it, raise the forks fully, loosen the top locknut (13mm ring spanner) and turn the bolt head from beneath. Wind it down to raise the fork height, or up to lower the height.

Lower the forks and check the clearance. Adjust further if necessary.

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	REMEDY
Forks do not go down with no load on	Sticking in masts	Spray inside the masts with silicon spray
Forks do not go down even with a load on	Faulty lowering solenoid valve	Contact your agent or the manufacturer for instructions or service
	Blockage in lowering orifice	
	Wire broken or disconnected from lowering solenoid	
Forks will not go up, even with no load	Faulty 'Raise' solenoid	
	Wire broken or disconnected from Raise solenoid	
Battery goes flat overnight or when not in use	'AUTO-DOWN' switch left on	Leaving 'AUTO-DOWN' switch on can result in the 'down' solenoid operating continuously, which will drain the battery in a few hours. Always turn the automatic switch to 'OFF' position when not in use.
Machine will not work at all, even though the batteries are charged	Blown fuse	Remove the access panel & check fuse. If blown, try to ascertain cause and rectify before replacing fuse
	Wiring fault	Contact Manufacturer or agent.

A more detailed trouble-shooting guide and Service Manual is available on request from the manufacturer.

QUIKSTAK MAINTENANCE

Quikstak 'smart-stackers' have been designed to require a minimum of regular scheduled maintenance.

Every 3 – 4 months:

- Spray inside the masts with a silicon spray.
- Check operation of the brake, switches, Emergency Stop button, sensor function, top and bottom cut-out switches.
- Visually check for hydraulic oil leaks
- Clean the machine, including the sensor lenses.

HAZARD AND RISK ASSESSMENT FOR QUIKSTAK 'SMART-STACKERS'

SCOPE

- Manually propelled and self-propelled models
- With or without infra-red height-sensing
- Lift heights up to 2.4 metres

DESCRIPTION

A stacker truck using battery-power to lift loads, and, on self-propelled models, to provide forward and reverse traction. Most models also feature infra-red load-height sensing, which automatically maintains a pre-set working level when loading or unloading pallets.

CONSTRUCTION

A steel frame comprising main structure (chassis and masts), fork assembly which moves vertically in masts, outrigger load stabilisers, and rear steering wheel assembly. Electrical and hydraulic control mechanisms, batteries and motors, allow the operator to raise, lower, and move loads.

RISK RANKING METHOD

Based on AS/NZ 4360: 1995 Risk Management

Risk is the combination of the likelihood of a specific unwanted event and the potential consequences if it should occur.

PROBABILITIES

- A. common or repeating occurrence
- B. known to occur or 'it has happened'
- C. could occur, or 'I've heard of it happening'
- D. unlikely to occur
- E. practically impossible

CONSEQUENCES FOR PEOPLE

- 1. fatality or permanent disability
- 2. serious lost time, injury or illness
- 3. moderate lost time, injury or illness
- 4. minor lost time, injury or illness
- 5. no lost time

RISK RANKING METHOD

For each event the appropriate probability (a letter A to E) and consequence (a number 1 to 5) is selected.

		PROBABILITY OF EVENT OCCURRING					
		Common ←————→ Unlikely					
		A	B	C	D	E	
Consequences if event does occur	Serious	1	1	2	4	7	11
		2	3	5	8	12	16
	Minor	3	6	9	13	17	20
		4	10	14	18	21	23
		5	15	19	22	24	25

The consequences (loss outcomes) are combined with the probability of those outcomes in the risk ranking table to identify the risk rank of each loss event, (e.g. a consequence of 3 with a probability of B yields a risk rank from of 9. A rank of 1 is the highest magnitude of risk for a highly likely, very serious event. A rank of 25 represents the lowest magnitude of risk, an almost impossible, very low consequence event.

1 – 3	Extreme	13 – 16	Moderate
4 – 6	Serious	17 – 19	Low
7 – 9	High	20 – 22	Very Low
10 – 12	Significant	23 – 25	Insignificant

Potential Hazards

Hazard:	Use by unauthorised or untrained personnel.
Risk Ranking:	C4 =18 (LOW)
Control Method:	Never allow anyone except a trained operator to use the stacker. Operators must read the booklet supplied with the machine. Press in the 'Power Isolation Switch' when not in use.
Hazard:	Colliding with other persons or products.
Risk Ranking:	C3 = 13 (MODERATE)
Control Method:	Have separate designated lanes for lift trucks and pedestrians. Install end-of-aisle mirrors. Do not allow laden trucks to go down ramps (if manually propelled).
Hazard:	Stacker being tipped over.
Risk Ranking:	C2 = 8 (HIGH)
Control Method:	Travel with the load just above floor level whenever possible. Avoid travel on inclined surfaces, and never turn on a gradient. Slow down before turning. Watch for low doorways or other structures that the top of the machine could collide with.

Potential Hazards *contd.*

Hazard:	Objects falling off pallet, injuring operator or other personnel.
Risk Ranking:	C3 = 13 (MODERATE)
Control Method:	Ensure the load is stable before lifting. Never attempt to lift more than the rated load, nor exceed the rated load centre. Move the vehicle with the load raised just off the ground, whenever possible. Slow down before turning.
Hazard:	Load being put down on operators or other person's feet.
Risk Ranking:	C2 = 8 (HIGH)
Control Method:	Ensure that all other people are well clear before lowering load. Operators must stand behind the machine to operate the controls, not reach around from the side.
Hazard:	Operator's feet being nipped by the rear wheels, while reversing.
Risk Ranking:	D3 = 17 (LOW)
Control Method:	The tiller handle should be pulled down while reversing, to increase the distance between the operator and the machine.
Hazard:	Flammable gases generated during charging of the batteries.
Risk Ranking:	D4 = 21 (VERY LOW)
Control Method:	Charge machines only in well-ventilated areas, preferably a designated area displaying signs stipulating 'No Smoking' and 'No Sources of Ignition'.

Potential Hazards *contd.*

Hazard:	Acid burns sustained while maintaining the batteries (not applicable if the machine is fitted with sealed gel batteries)
Risk Ranking:	D3 = 17 (LOW)
Control Method:	PVC gauntlets and face shield must be worn while checking fluid levels in batteries.
Hazard:	Electrocution
Risk Ranking:	D1 = 17 (LOW)
Control Method:	Ensure the charging lead is in good condition. Replace the lead if the insulation is damaged. Keep dry, and charge in dry areas. Fit an RCD to the supply socket.
Hazard:	Load coming down if the sensor is unintentionally activated.
Risk Ranking:	C5 = 22 (VERY LOW)
Control Method:	Reduce the sensor range to just beyond the fork backplate, or to the minimum required to operate effectively (see page 5 for more details). Engage the safety catch before reaching underneath the load (to retrieve a dropped object, for example). Consider having a 'Time Delay' option fitted.
Hazard:	Load being tipped off the pallet if the 'Automatic Raise' switch is left on, a full pallet put down on the floor, and the stacker withdrawn from the pallet. When the forks are nearly right out, the sensor may signal the forks to raise, lifting one side of the pallet.
Risk Ranking:	C3 = 13 (MODERATE)
Control Method:	Always turn off the Automatic switch when not in use. Reduce the sensor range to the minimum required to operate effectively. Use the Emergency Stop button to instantly stop all functions, if necessary.

Conclusion

Quikstak 'smart-stackers' are manufactured to meet the design and safety standards of AS 2359 (Powered Industrial Trucks) and ANSI B56.1.

Safety Features Include:

- A battery isolation switch.
- An Emergency Stop button.
- A Booklet detailing full instructions for safe operation and maintenance procedures is provided with each machine.
- A Safety screen preventing operator access to most moving parts.
- A positive-action park brake which locks both rear wheels. (Manually propelled models).

Self-propelled models also feature:

- A Park-brake which is automatically applied when the control handle is released.
- A Key switch for restricting use to authorised operators.

Warranty

The conditions detailed below are a brief summary only. A full 'Warranty Terms and Conditions' document is available on request.

Quikstak 'smart-stackers' are warranted by the manufacturer against faulty workmanship and defective materials for a period of 12 months from the date of purchase.

Such warranty is subject to the following conditions:

1. Under the terms of this warranty, the manufacturer agrees to repair or replace, at its own discretion, any parts that fail due to poor workmanship or faulty materials. It does not extend to any other loss or damage including consequential loss or damage or loss to other property or persons.

2. Without limiting the generality of paragraph 1 above, this warranty does not cover the following:

- a) Travel expenses or freight.
- b) Damage caused by accident, misuse or abuse.
- c) Damage to any goods which have been altered or modified by someone other than the manufacturer or its authorised agent.
- d) Damage or loss to the goods due to their unsuitability for any particular use.

3. Faults or breakdowns should be reported to the dealer who supplied the machine. No claims will be recognised unless authorisation is obtained from the manufacturer before any repairs are done.

This warranty shall be interpreted according to the laws of New Zealand and the parties agree to submit to the jurisdiction of the Courts of New Zealand.

SIMPRO QUIKSTAK CHECKLIST

MODEL _____ SERIAL NUMBER _____ Start date ___/___/___

NOTE: This check must be made by the operator on a regular basis. Certain items may be listed that are not included on all models. Check all items applicable to unit noted above.

Tick appropriate box: "OK"



"Needs repair" (complete comments section)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Visual Checks												
Damage: Dented, bent or broken parts												
Leaks: Hydraulic oil												
Fork: Secure and tight												
Charger socket: intact												
Wheels: Load and drive wheels												
Safety: Controls and stickers												
Operational checks												
Travel: Fork up down, no jamming or noises												
Brakes: Tiller brakes lock on, power-drive												
Power: Lead not damaged												
Controls: Switches, buttons operational												
Safety: Fork lock, battery lock, limit switches												
Attachments: Fork attachments, height sensor												
Operators Initials												
Supervisors OK												

Comments: (Items needing repair or adjustment)

Caution- if the Quikstak is found to be in need of repair or in any way in unsafe condition, the matter shall be reported immediately to the designated authority and the machine shall not be operated until it has been restored to safe operating condition.

If during operation the Quikstak becomes unsafe in any way, the matter shall be reported immediately to the designated authority and the machine shall not be operated until it has been restored to safe operating condition.

Do not make any repairs or adjustments unless authorised to do so.

Designed and Manufactured in New Zealand by:



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