USER MANUAL

Simpro Crate Wizard v3.0

User Manual | Simpro Crate Wizard v3.0
Original Instructions | English | v10.0 | December 2019

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For the purposes of standards compliance and international conformity, this document uses Système International (SI) units. These may be converted to Imperial units as follows:

1 kilogram (kg) = 2.2 pounds (lb)

1 metre (m) = 1000 millimetres (mm) = 39.37 inches (in) = 3.28 feet (ft) = 1.09 yards (yd)

The following stylistic conventions are used throughout this document:

Text in GREEN indicates a point of interest.

Text in RED indicates a point of warning or a safety hazard.

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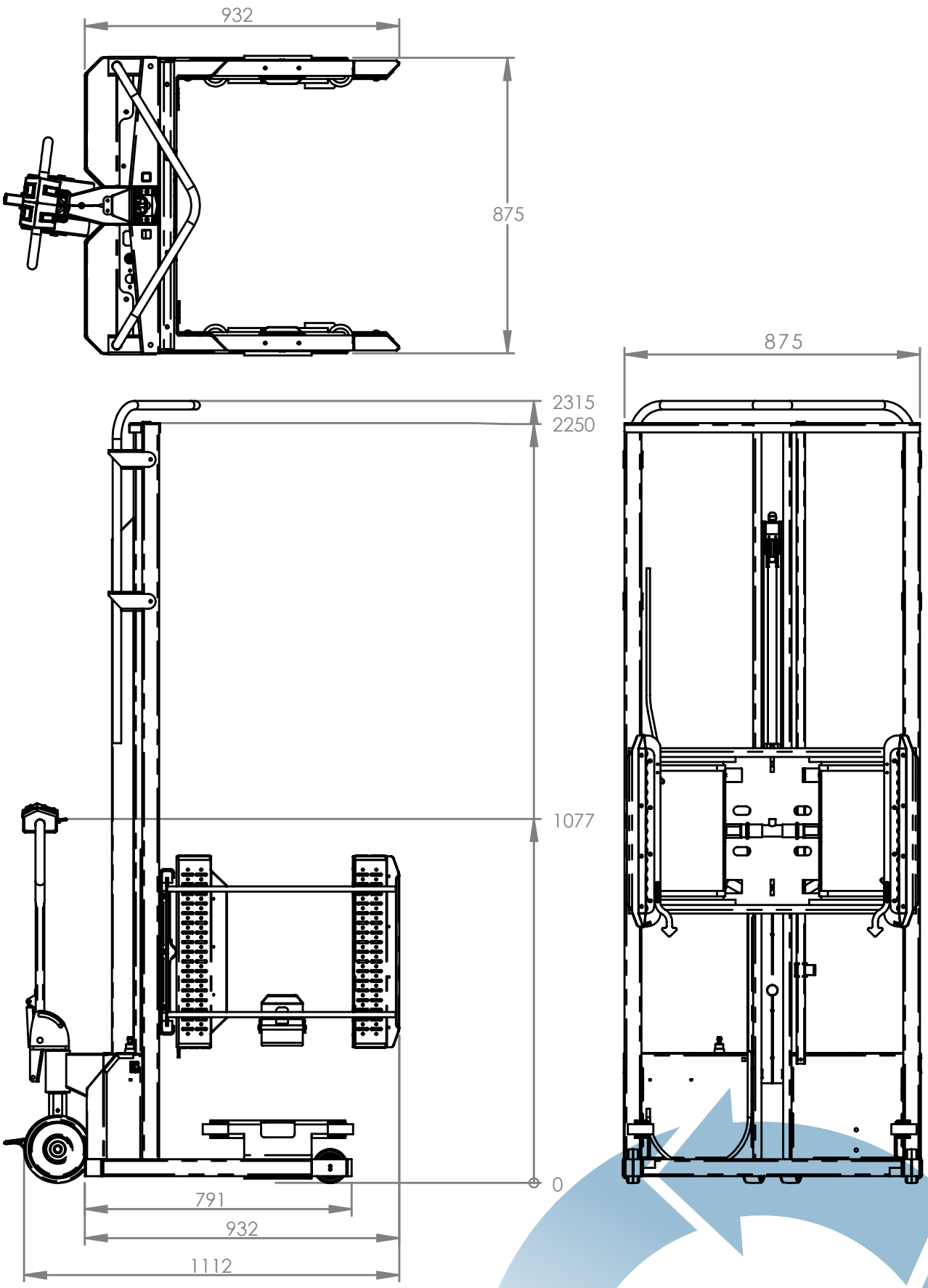
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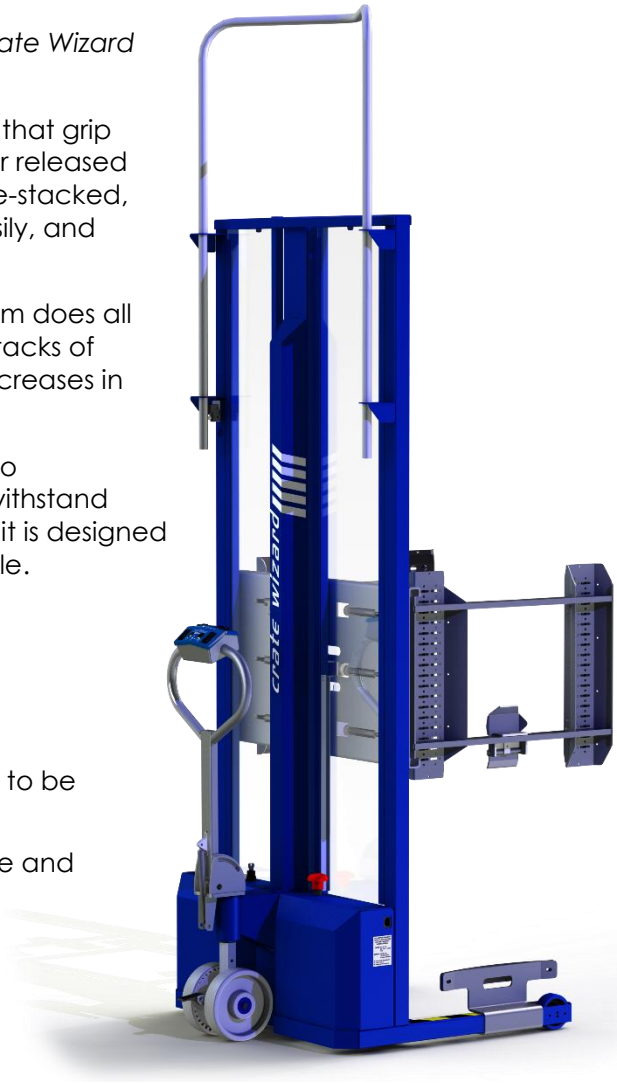
I. Contents

2. Product Overview



Congratulations on your purchase of a Simpro *Crate Wizard* electro-hydraulic pedestrian crate stacker.

The Crate Wizard features unique clamping arms that grip the sides of bread-crates and can be clamped or released at any height. This allows crates to be stacked, de-stacked, moved, stored or loaded onto trucks; quickly, easily, and safely.

The Crate Wizard's reliable electro-hydraulic system does all the lifting, so one person can effortlessly handle stacks of crates weighing up to 200kg. This delivers large increases in productivity.

The Crate Wizard has a tiny footprint and is easy to manoeuvre, but is also very rugged and built to withstand years of rough handling. Like all Simpro products, it is designed to be maintenance-free and exceptionally reliable.

2.1 Key features

Key features of the Crate Wizard include:

1. A very compact footprint, allowing crates to be stacked close together.
2. A lightweight design which is easy to move and steer, with a 3-point stability triangle
3. A standard weight capacity of 200kg.
4. A very reliable, maintenance-free design.
5. A powder-coated main frame and zinc-plated lifting carriage and clamp arms.
6. A powerful, failsafe clamping mechanism which can lift a range of different crates.
7. A modular design which can be modified to suit a wide range of non-standard crate sizes, shapes, and weights.

2.2 Construction

The Crate Wizard consists of a steel frame with a vertical mast and stabilizing legs; a lifting clamp frame with gas struts, a hydraulic ram, and two clamping arms with rubber domes; a hydraulic ram for lifting,12V battery, electro-hydraulic powerpack, a manual tiller with operating controls, control systems, wheels, and a charging cable.

2.3 Mechanism

When both RAISE buttons are pressed, a hydraulic ram is extended, causing the clamp frame to travel vertically in the mast. When both LOWER buttons are pressed, a valve allows the hydraulic fluid to return to the reservoir, and the clamp frame is lowered by gravity.

Attached to the lifting carriage are two clamping arms which can slide inwards and outwards. The arms are pulled inwards by six non-powered gas struts, and pushed outwards by an opposing hydraulic ram. When both OPEN buttons are pressed, the hydraulic ram moves the arms apart, releasing the crates. When both CLOSE buttons are pressed, a valve allows the hydraulic fluid to return to the reservoir, and the arms move together to clamp onto the crates.

2.4 Safe Lifting Capacity

The Safe Lifting Capacity of the Crate Wizard is **200 kilograms (440lb)**.

⚠ Never attempt to lift objects that weigh more than the factory-designated Safe Lifting Capacity of the machine.

2.5 Duty cycle

The figures given below are estimates only.

Power Supply	Throughput	No. of crates equivalent (average ~20kg each)	Measurement Unit
Battery	20,000kg to 1.0m	1000 crates	per charge

2.6 Intended operational life

The intended operational life of the Crate Wizard is as follows:

Average Gross Weight of Crate Stack	Intended Operational Life
< 100kg	200,000 raise/lower cycles
100kg – 200kg	150,000 raise/lower cycles
200kg – 250kg	100,000 raise/lower cycles

2.7 Noise emissions

The noise emissions of the Crate Wizard in standard operation have been assessed as not exceeding ~60 dB(A) at the operator's ear.

Operators are not required to wear hearing protection but are recommended to do so if using the machine on a constant basis.

⚠ ISO standards for machinery safety specify that noise emissions are to be measured in A-weighted decibels (dB(A)), a unit of volume which is adjusted to reflect the sensitivity of human hearing. The measurements are taken at a point 1.6 metres above the ground at the operator's working position.

2.8 Environmental restrictions

The Crate Wizard may be used indoors or outdoors. However the following restrictions apply:

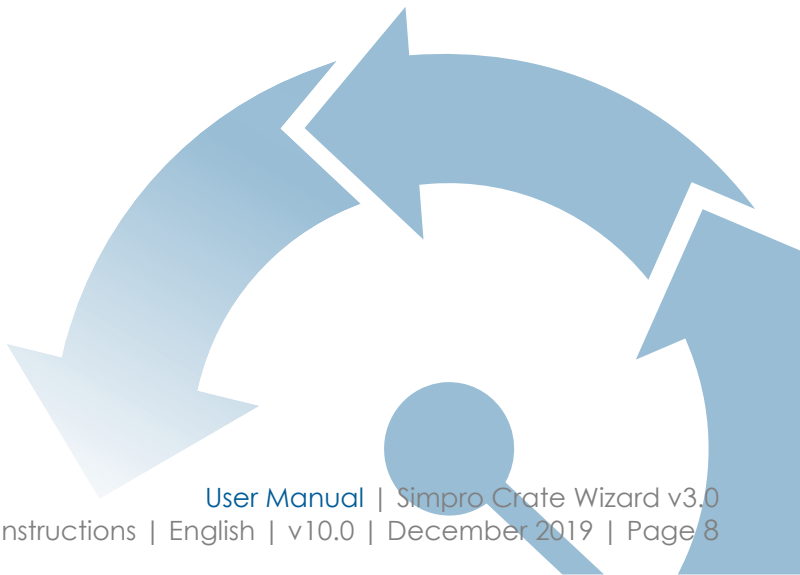
1. Height above sea level not more than 1000m;
2. Ambient temperature not higher than +40℃ and not lower than -10℃;
3. At ambient temperatures above 35℃, the relative humidity should not exceed 50%; at lower temperatures, higher relative humidity is permitted;
4. Never operate in flammable, explosive, corrosive, acidic or alkaline environments.

2.9 Ingress protection

Item	IP Rating
Push buttons, switches and lamps	IP66
Clamp-arms interlock	IP66
Coded magnetic switch	IP66
Motor	IP54 (additional protection provided by covers)
Overall	IP56 (optionally upgraded to IP66 or IP69K)

2.10 Notes

1. This User Manual describes approved procedures for the operation, maintenance, and routine inspection of the Crate Wizard pedestrian electro-hydraulic crate stacker.
2. This manual is written in English, and is to be considered the 'Original Instructions' for the purposes of EU Machinery Directive 2006/42/EC.
3. Operator(s) must read and understand this manual before using the machine.
4. If the machine is to be leased, sold or otherwise transferred, then this manual shall accompany the machine.
5. This is a generic manual. Simpro reserves the right to change the design of our products at any time without notification. In cases where the manual does not correspond with the actual product, use the manual as a reference guide only, and contact your authorized Simpro agent for assistance if required.
6. Contact your authorized Simpro agent if you encounter any problems or faults with the machine.
7. Errors in this manual should be reported by email to info@simpro.world.



3. Safety Assessment

The Crate Wizard has been designed to be as safe as possible without restricting the ease-of-use and versatility of the machine.

⚠ A Hazard and Risk Assessment should be undertaken before the Crate Wizard is used for the first time, as described in Section 3.4.

3.1 Safety features

The safety features of the standard Crate Wizard design are as follows:

1. A dual-hand control system, which prevents the operator from moving their hands away from the control panel while using the machine.
2. A prominent EMERGENCY STOP button to instantly disable the machine.
3. A lifting action which maintains the weight of the crates within the machine footprint.
4. A pressure-compensating lowering valve which automatically regulates the lowering speed regardless of the weight of the crates.
5. Sheet-metal covers to prevent persons from accessing internal electrical and hydraulic components.

3.2 Reasonably foreseeable misuse

The reasonably foreseeable misuse considered in the standard Crate Wizard design is as follows:

1. Attempts to use the machine by untrained operators;
2. Attempts to lift crates that the arms are not specifically designed to hold;
3. Attempts to bypass the emergency stop or other safety systems;
4. Attempts to clean the machine without following proper procedures.
5. Service, repairs or adjustment carried out by non-qualified personnel'

3.3 OSH compliance specification guide

Companies in most jurisdictions (including Australia, NZ, UK, USA, Canada and the EU) are required by law to provide a safe workplace for their staff, including ensuring that all new and existing machinery is safe to operate.

Although the particulars of safety legislation differ, most countries accept that machinery is 'safe to operate' if it can be demonstrated to **comply with ISO 13849-1:2015 (or a regional equivalent thereof).**

ISO 13849-1:2015 may call for additional guarding and safety features, depending on the particular circumstances in which a machine is to be used. The purpose of this section is to assist potential Crate Wizard owners to determine whether special safety features may be required on their machine.

- ISO 13849-1:2015 is a machinery-safety standard issued by the International Standards Organisation. It provides safety requirements and guidance on the principles for the design and integration of safety-related parts of control systems (SRP/CS), including the design of software.
- ISO 13849-1 has been modified for local conditions and reissued under different terminology by some national standards authorities. In Australia and New Zealand the equivalent (almost identical) standard is called AS/NZS 4024.1:2014.
- In the USA, ANSI standards are commonly used to demonstrate the safety of machinery, rather than ISO 13849-1. However since the US model relies largely on 'best practise' and 'liability' to enforce workplace H&S norms, US companies who demonstrate machinery safety using ISO 13849-1 may be considered to have met or exceeded their H&S obligations.

3.3.1 The ISO 13849-1:2015 safety model

Unlike the 'system architecture' model used by earlier safety standards, ISO 13849-1:2015 uses a 'functional safety' model of machinery safety. That is, it takes account of the reliability of parts as well as other factors to create a comprehensive measure of the risk reduction achieved by a safety function – an indicator called **Performance Level (PL).**

The standard defines five Performance Levels, ranging from **PL(a)** (lowest performance) to **PL(e)** (highest performance).

The standard also defines the Performance Level that a given safety function must achieve to reduce the risk to an acceptable level – a value called **Performance Level required (PLr)**.

3.3.1.1 Determining the Performance Level required (PLr)

As defined by the ISO 13849-1:2015 safety model, the minimum acceptable PLr for any given safety function is based on three input parameters:

1. Severity of injury expected from the associated hazard
2. Frequency and/or duration of exposure to the associated hazard
3. Possibility of manually avoiding the associated hazard

The following table may be used to determine the acceptable PLr from these parameters.

Safety Function PLr Determination Table			
Severity of injury expected from hazard	**Frequency and/or duration of exposure to hazard**	**Possibility of manually avoiding the hazard**	**Minimum acceptable PLr**
Slight injury (reversible)	Seldom to quite often and/or exposure time is short	Possible under specific conditions	**PL(a)**
		Scarcely possible	**PL(b)**
	Frequent to continuous and/or long exposure time	Possible under specific conditions	
		Scarcely possible	**PL(c)**
Serious injury or death (irreversible)	Seldom to quite often and/or exposure time is short	Possible under specific conditions	
		Scarcely possible	**PL(d)**
	Frequent to continuous and/or long exposure time	Possible under specific conditions	
		Scarcely possible	**PL(e)**

To demonstrate compliance with ISO 13849-1:2015, the minimum acceptable PLr of the safety functions must be assessed **for each identified hazard in the specific conditions in which the machine is to be used**.

> The safety function PLr may be assessed as part of the regular Hazard and Risk Assessment described in Section 3.4. Although this assessment includes all hazards intrinsic to the Crate Wizard design, other safety functions may be necessary to address hazards specific to your intended conditions of use. These can be assessed in the blank spaces provided.

3.3.1.2 Achieving the Performance Level required (PLr)

As standard, all hazards intrinsic to the Crate Wizard design are addressed by safety functions **with a minimum performance of PL(c)**.

Therefore, additional or customised safety systems are only required in the following cases:

1. The customer's assessment identifies that hazards exist which have been addressed in the standard Crate Wizard design, but which, due to conditions specific to their intended conditions of use, require safety function performance of PL(d) or PL(e).
2. The customer's assessment identifies that hazards exist which are entirely specific to their intended conditions of use, and which have therefore not been addressed in the standard Crate Wizard design.
3. The customer is subject to corporate policies, union contracts, OSH regulations or other external factors which demand safety function performance of PL(d) or PL(e), irrespective of the ISO 13849-1:2015 safety model.

In any of these cases, information about the required safety function PLr should be provided to Simpro before placing an order. Simpro will then propose additional or uprated systems to achieve the PLr in compliance with ISO 13849-1:2015. This may include any or all of the following:

- Upgrade of control system architecture to Category 3 or Category 4
- Additional guarding panels
- Remote control systems
- Training of personnel
- Signage and floor markings

3.4 Hazard and Risk Assessment Guide

Most jurisdictions require machinery owners to conduct a Hazard and Risk Assessment for their equipment, which considers all relevant factors such as the area it is used, the skill and training of operators, the proximity of other persons, frequency of use, etc.

The following section is not a complete site-specific Hazard and Risk Assessment, but an assessment of the risk factors that are intrinsic to the Crate Wizard design. Blank template spaces are provided for additional site-specific hazards.

> The procedure for carrying out a Hazard and Risk Assessment is typically defined with reference to ISO 12100:2010, issued by the International Standards Organisation. This standard describes procedures for identifying hazards and estimating and evaluating risks during relevant phases of a machine life cycle.

> As with all powered industrial equipment, some hazards will remain despite any precautions undertaken by the manufacturer or owner of the machine. It is essential that operators are aware of these residual hazards and what they must do to prevent harm to themselves or to others, as described in Section 3.4.3.

3.4.1 ISO 12100:2010 risk assessment model

In the ISO 12100:2010 risk assessment model, each identified hazard is given a Risk Factor, from which is derived a final Risk Evaluation. These parameters can be determined as follows.

3.4.1.1 Determining Risk Factor

The Risk Factor associated with any given hazard may be calculated using the following table, with the formula: **Risk Factor = LO x FE x DPH x NP**

LO	Likelihood of Occurrence	FE	Frequency of Exposure	DPH	Degree of Possible Harm	NP	Number of Persons at risk
0.1	Impossible, or possible only in extreme circumstances	0.1	Infrequently	0.1	Scratch or bruise	1	1 – 2 persons
0.5	Highly unlikely though conceivable	0.2	Annually	0.5	Laceration, mild ill-health	2	3 – 7 persons
1	Unlikely but could occur	1	Monthly	1	Break minor bone or illness (temporary)	4	8 – 15 persons
2	Possible but unusual	1.5	Weekly	2	Break major bone or illness (permanent)	8	16 – 50 persons
5	Even chance – could happen	2.5	Daily	4	Loss of 1 limb or eye/serious illness (temporary)	12	51 or more persons
8	Probable – not surprised	4	Hourly	8	Loss of 2 limbs or eyes/serious illness (permanent)	-	-
10	Likely, only to be expected	5	Constantly	15	Fatality	-	-
15	Certain, no doubt	-	-	-	-	-	-

3.4.1.2 Determining Risk Evaluation

Once the Risk Factor has been calculated, the Risk Evaluation of the hazard can be determined from the following table:

Risk Factor	0-1	2-5	6-10	11-50	51-100	101-500	501-1000	1001 +
Risk Evaluation	Negli-gible	Very Low	Low	Significant	High	Very high	Extreme	Unacce-ptable

3.4.2 *Identified Hazards*

The following hazards have been identified that are intrinsic to the Crate Wizard design. For each hazard a full Risk Evaluation has been completed and control measures described.

⚠ Blank template spaces are provided at the end for machinery owners to identify, assess and control additional site-specific hazards.

Entanglement or amputation of fingers or limbs in moving parts										
Operator	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2
	Operation of the Crate Wizard requires the operator to have both hands on the control buttons. The operator cannot reach any moving parts while operating									
Other persons	LO:	1	FE:	4	DPH:	1	NP:	1	Risk Factor:	4
	The operator has a good view of the carriage while lifting and lowering and can simply stop all movement by removing either hand from the control button if any other persons approach the carriage while moving.									
Control measures	Operators are responsible to obey warning signs fitted to the machine and instructions, regarding keeping himself and others clear of all moving parts.									
Comments	The Crate Wizard is designed so trapping hazards are minimized, and both hands are needed to operate the machine.									
Crushing due to unauthorized rapid descent of carriage										
Operator	LO:	0.5	FE:	4	DPH:	2	NP:	1	Risk Factor:	4
	The operator is protected from the carriage by the frame and guarding during operation. There is nothing to stop an operator or other person moving under the carriage while it is elevated. Significant safety margins ensure that the probability of failure of any steel, hydraulic, or control parts failing is low.									
Other persons	LO:	0.5	FE:	4	DPH:	2	NP:	1	Risk Factor:	4
	As above.									
Control measures	Operators are responsible to obey warning signs fitted to the machine and instructions, regarding keeping himself and others away from the area under the carriage when raised. The machine must be regularly maintained, and all faults repaired immediately.									
Comments	A hydraulic speed-control valve limits the maximum speed of descent in normal use.									
Operator or others being hit by falling or flying debris										
Operator	LO:	1	FE:	4	DPH:	0.5	NP:	1	Risk Factor:	2
	The operator is protected from the carriage by the frame and guarding during operation.									
Other persons	LO:	1	FE:	4	DPH:	0.5	NP:	1	Risk Factor:	2
Control measures	A system for limiting the maximum height of a raised stack is fitted, to ensure stability. Operators are responsible to obey all instructions and warning signs regarding keeping themselves and others away from the machine while in use.									
Comments										

Crushing due to machine falling over										
Operator	LO:	2	FE:	4	DPH:	8	NP:	1	Risk Factor:	64
	Low risk as Crate Wizard stackers are very stable and the centre of gravity remains well within the machine's footprint throughout the lifting cycle.									
Other persons	LO:	2	FE:	1	DPH:	10	NP:	1	Risk Factor:	20
	As above.									
Control measures	A system for limiting the maximum height of a raised stack is fitted, to ensure stability. Do not operate on uneven ground, or ground with a slope of more than 1:12. Never attempt to lift non-standard crates for which the machine was not designed.									
Comments										
Electrocution or electric shock										
Operator	LO:	0.5	FE:	4	DPH:	15	NP:	1	Risk Factor:	30
Other persons	LO:	0.5	FE:	4	DPH:	15	NP:	1	Risk Factor:	30
	As above.									
Control measures	Fit a Residual Current Device (RCD) to all power sockets. Check all leads frequently and repair or replace if damaged. All leads should be checked and tagged by a registered electrician at regular intervals.									
Comments	The battery charger on the Crate Wizard is double-insulated.									
Contamination from lifting toxic powder and liquid										
Operator	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
	Great care should be taken when lifting crates containing powder or liquids. If the product could cause any harm whatsoever to the operator or to any other person, ensure all persons in the vicinity have appropriate PPE.									
Other persons	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
	As above.									
Control measures	The operator must wear appropriate Personal Protective Equipment (PPE), and ensure that all other persons are well clear of the area.									
Comments	Crates of toxic material should not be lifted with the Crate Wizard. Alternative methods should be used.									
Damage to skin when used in extreme weather conditions										
Operator	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
	If the machine is to be used in extreme cold or heat, the operator must wear gloves and other suitable Personal Protective Equipment.									
Other persons	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
	As above.									
Control measures	The operator must wear appropriate Personal Protective Equipment (PPE) when operating machinery in extreme weather conditions.									
Comments	See Section 2.8 for Crate Wizard environmental restrictions.									

Site-specific hazard:										
Operator	LO:		FE:		DPH:		NP:		Risk Factor:	
Other persons	LO:		FE:		DPH:		NP:		Risk Factor:	
Control measures										
Comments										

Site-specific hazard:										
Operator	LO:		FE:		DPH:		NP:		Risk Factor:	
Other persons	LO:		FE:		DPH:		NP:		Risk Factor:	
Control measures										
Comments										

Site-specific hazard:										
Operator	LO:		FE:		DPH:		NP:		Risk Factor:	
Other persons	LO:		FE:		DPH:		NP:		Risk Factor:	
Control measures										
Comments										

Site-specific hazard:										
Operator	LO:		FE:		DPH:		NP:		Risk Factor:	
Other persons	LO:		FE:		DPH:		NP:		Risk Factor:	
Control measures										
Comments										

Site-specific hazard:										
Operator	LO:		FE:		DPH:		NP:		Risk Factor:	
Other persons	LO:		FE:		DPH:		NP:		Risk Factor:	
Control measures										
Comments										
Site-specific hazard:										
Operator	LO:		FE:		DPH:		NP:		Risk Factor:	
Other persons	LO:		FE:		DPH:		NP:		Risk Factor:	
Control measures										
Comments										

3.4.3 Residual Hazards

As with all powered industrial equipment, some 'residual hazards' may be present despite any guarding or safety measures implemented by the manufacturer.

The machinery owner has a legal responsibility to identify and assess these residual hazards, and to take **all reasonable precautions** to eliminate, isolate, or minimize them. Such precautions may include any or all of the following:

- Taking steps to monitor and enforce the training of operators.
- Design and implementation of Standard Operating Procedures.
- Using disciplinary measures to ensure the Standard Operating Procedures are followed.
- Posting signage, floor marking, or other warnings as deemed appropriate.
- Taking steps to develop a culture of safety and open communication among staff.

3.5 Safety Norms

The following safety norms must be observed for the safe use of a Crate Wizard crate lifter.

- Only trained and authorised operators should be permitted to use the machine.
- Operators must read and obey the instructions displayed on the machine.
- Never operate machine on ground with a slope ratio greater than 1:12.
- Never operate machine on the edge of a raised dock or platform.
- Never operate machine with any covers or guards removed.
- Never attempt to lift crates for which the machine was not designed.
- All persons other than the operator must keep at least two metres clear while the machine is in use.
- Always keep feet and hands well clear of crates, lifting carriage and clamp-arms when operating.
- Do not place feet or foreign objects underneath the lifting carriage while it is raised.
- Do not lift over-filled or overflowing crates.

Before connecting the machine to a power supply to charge the battery, ensure the voltage and frequency correspond with that listed on the rating plate.

Do not attempt to charge the machine if the power lead or insulation is damaged.

Do not connect to a damp power plug or socket.

Ensure the power socket is fitted with a residual current device.

Ensure there is complete continuity between the machine and an effective earthing system which complies with local and national regulations. The manufacturer cannot be held liable for the consequences of an inadequate earthing system.

4. Operating Instructions

4.1 Identification of controls

1. Emergency Stop (Section 4.2)
2. Key switch (Section 4.3)
3. Battery indicator and hour-meter (Section 4.4)
4. CLAMP/RELEASE rocker switches (Section 4.5)
5. RAISE/LOWER rocker switches (Section 4.6)
6. Height mode button (Section 4.7)
7. Safety horn (Section 4.8)
8. Height-sensor triggers (Section 4.9)
9. Max-height bar (Section 4.10)
10. Park brake (Section 4.11)
11. Charging socket (Section 4.12)
12. Crate-level pointers (Section 4.13)

4.2 Emergency Stop

Press this button DOWN to instantly cut all power to the machine. Pull UP to reset.

⚠ The Emergency Stop also function as a heavy-duty battery isolator switch.

4.3 Key switch

Turn the key CLOCKWISE to turn on the power.

⚠ An LED light should show on the battery indicator when the machine is successfully powered on.
⚠ If the machine does not power on, check that the Emergency Stop is pulled UP.

4.4 Battery indicator and hour-meter

The level of charge in the battery is shown by which LED is illuminated. When the battery indicator shows one or two bars of charge, the machine **should not be used**, and should be placed on charge immediately (Section 4.12.1).

The battery indicator has an integrated hour-meter, which shows the accumulated run time of the machine.

4.5 CLAMP/RELEASE rocker switches

Press the INNER part of both switches (C1+C2) to close the clamp-arms and hold crates.

Press the OUTER part of both switches (O1+O2) to open the clamp-arms and release crates.

- The clamping is done by the force of gas struts, so the motor does not run when clamping.
- The clamping function remains active for a brief time after the CLAMP switches are released (this time may be adjusted by a qualified person). If the RELEASE switches are pressed within ~2 seconds of pressing the CLAMP witches, the arms will not move, due to the 'run-on' of the clamp function.
- The clamp plates are moved apart hydraulically, and the motor runs in this function.
- If the RELEASE switches are held on when the clamp-arms are fully apart, the motor will continue to run, and hydraulic fluid will bypass through a pressure-relief valve. Although this causes no harm in normal operation, extended operation of the motor when the arms are not moving causes the hydraulic fluid to heat up, and may eventually result in damage. The RELEASE switches should not be held on longer than necessary.

4.6 RAISE/LOWER rocker switches

Press the UPPER part of both switches (U1+U2) to raise the lifting carriage. Press the LOWER part of both switches (D1+D2) to lower the lifting carriage.

The lifting carriage will stop moving when either button is released, or when it reaches the maximum travel extent. If the height mode is set to AUTO (Section 4.7.2), the carriage will also pause at pre-set heights, when an adjustable trigger is detected (Section 4.9).

- When the arms reach the top of the mast, the lift ram comes up against an end-stop. If the RAISE switches are hold on after the maximum height is released, the motor will continue to run, and hydraulic fluid will bypass through a pressure-relief valve. Although this causes no harm in normal operation, extended operation of the motor when the arms are not moving causes the hydraulic fluid to heat up and may eventually result in damage. The RAISE switches should not be held on longer than necessary.
- The pressure-relief valve also limits the maximum weight that the machine can lift. If an attempt is made to lift more than the factory-set maximum (200kg) the motor will run but the arms will not lift. If this occurs, DO NOT keep trying to lift the crates. Remove one or more crates from the stack and try again.
- The lowering speed can be adjusted by a qualified person.

4.7 Height mode button

Press this button to switch between AUTO height mode and MANUAL height mode.

- When the button is not illuminated, the height mode is MANUAL (Section 4.7.1).
- When the button is illuminated, the height mode is AUTO (Section 4.7.2).

4.7.1 MANUAL height mode

In MANUAL mode the lifting carriage is controlled only by the operator's inputs.

- The crate-level pointers (Section 4.13) are designed to help the operator choose the correct height for clamping crates in MANUAL mode.

4.7.2 AUTO height mode

In AUTO mode, the lifting carriage will stop moving whenever a height-sensor trigger (Section 4.9) is detected. This works both while lifting and lowering.

- The operator can leave the rocker switches pressed, and the carriage will resume moving after a brief pause (the duration can be adjusted by a qualified person).
- The operator can release and re-press the rocker switches to make the carriage resume moving immediately.

⚠ The Crate Wizard automatic height mode function is designed to assist operators that repeatedly have to lift a certain number of crates off a stack, leaving a certain number behind. It also has uses for lifting crates both off the floor and off dollies.

4.8 Safety horn

Press this button to sound a loud warning tone. This draws the machine to the attention of nearby persons.

⚠ The horn should be regularly used when the Crate Wizard is moving through busy warehouses and dispatch zones, and when approaching corners.

4.9 Height-sensor triggers

The height-sensor triggers are small clips which are detected magnetically when the machine is operated in AUTO height mode (Section 4.7.2). This causes the lifting carriage to pause at the position of the trigger.

The triggers slide up and down on a guide rail adjacent to the mast and can be easily repositioned to suit different numbers or types of crate. Additional triggers can also be attached to the guide rail.

4.10 Max-height bar

The bar is designed to limit the maximum height that a stack can be lifted to. The bar is lifted by the top crate, and when the max height is reached, the power to the lift motor is cut.

⚠ The lowered height of the bar, and the maximum lift height are adjustable by a qualified person.

4.11 Park brake

Lift the pedal with your foot to apply the park brake, and press down on the pedal to release the park brake. Both rear wheels are locked when it is applied.

⚠ The park brake is not designed to be used as a service brake. It should not be used to slow the machine while moving down a ramp, or to bring the machine to a stop.

4.12 Charging socket

The charging socket is located on the right side of the machine. The Crate Wizard uses an IEC C13 power lead, which connects to the IEC C14 socket on the side of the machine.

> ⚠ IEC leads are used for many household appliances and are widely available from electronics stores. They are sometimes known as 'kettle leads'.

4.12.1 Charging the battery

To recharge the battery, simply **connect the supplied IEC power lead into the socket on the side of the machine, and into a standard 1-phase power outlet**. A full charge from flat normally takes about 8 hours.

> ⚠ The onboard smart charger automatically adapts to different input currents, manages the charging cycle to maximise battery life, and prevents overcharging.

4.13 Crate-level pointers

The lifting carriage normally has 'crate-level pointers' fitted. These provide visual feedback to the operator, allowing them to select the correct height when clamping crates.

For standard crates, the bottom of the crate-level pointer should be approximately **10mm (1/2") above the bottom of the crate** being picked up when the clamp-arms are closed.

> ⚠ The position of the crate-level pointers may be adjusted by a qualified person.

5. Care and Maintenance

The Crate Wizard is designed to give many years of service with minimal maintenance. In the event a fault or malfunction does occur, refer to the Quick Trouble Shooting Guide in Section 5.1 before contacting your agent for service.

- Contact your agent if repair or service work is required.
- All repair and service work must be carried out by qualified personnel.
- Replacement parts must be supplied by Simpro or an authorized Simpro agent, and must be of the same design and specification as the original parts.

5.1 Quick Troubleshooting Guide

Refer to the Quick Troubleshooting Guide below before contacting your agent for service.

Problem	Possible Causes	Remedy	Reference
The machine will not lift crates, and the motor does not run	Flat Battery	Recharge the battery.	5.4.3
	Triggered circuit breaker	Check and rectify. The circuit-breaker may trigger if the machine is operated with a flat battery, but should automatically reset after a short time.	5.4.8
	Faulty raise/lower buttons or wiring	Check and rectify.	
	Faulty raise relay	The relay contactor should click when the 'up' button is pressed – if not, contact your agent for replacement.	
The machine will not lift crates, although the motor runs	Crates too heavy	Manually remove crates from the stack to reduce the combined stack weight. The Crate Wizard is designed to lift 200kg max.	2.4 5.3.1.1
	Pressure-relief valve set too low	Contact your agent for support.	5.5.2.2
Carriage will not come down from the fully raised position	Carriage sticking in masts	Spray lubricant inside of masts. Lubricate the roller arms at top of carriage.	5.3.2
	Lift ram jamming	Contact your agent for support.	5.3.2
	Faulty switch, wiring, or lowering valve	The lowering valve should click when the button is pressed – if not, check the switch, wiring and electro-magnetic coil.	5.3.2

5.2 Cleaning

The machine should be cleaned with a low-pressure water jet, a cloth and a mild cleaning solution. Cleaning should only be carried out with the carriage in the fully lowered position.

- Do not clean the machine with a high-pressure water jet, such as a waterblaster.

- For IP ratings of the machine and various subcomponents refer to Section 2.9.

5.3 Carriage jams

Occasionally the clamp-arms may become jammed at some point in the lifting cycle. This is usually a minor issue which may be easily rectified.

⚠ The carriage is not powered down – it is lowered by gravity alone.
⚠ Refer to Section 5.5 for details of the hydraulic system.

5.3.1 Carriage jams while raising

If the carriage jams while raising the cause may be either an overweight stack of crates, or a mechanical fault, such as a bent lifting guide or misaligned roller.

5.3.1.1 Overweight crate stack

1. Lower the carriage to ground level and open the clamp-arms.
2. Remove some crates from the stack, then try again.

⚠ If the pressure-relief valve is adjusted incorrectly, the carriage may stall even when lifting crates that are within the rated capacity of the machine. Adjustment of the pressure-relief valve should only be carried out by a suitably qualified technician, with prior authorization from Simpro.

5.3.1.2 Mechanical fault

1. If possible, lower the carriage to ground level, open the clamp-arms and remove the crates.
2. Attempt to visually identify the cause of the jamming. The most likely causes are:
    a. The mast may have been bent or damaged.
    b. Lack of lubrication.
3. With the carriage lowered, rectify the problem by straightening and/or realigning the mechanical components as required. If the mast is bent, you may need to contact your agent for support.
4. Run the machine through several full cycles to ensure the problem has been properly resolved.

5.3.2 Carriage jams while lowering

If the carriage jams on the way down, or has jammed on the way up but will not come down, it may be due to a hydraulic, electrical, or mechanical fault.

5.3.2.1 Hydraulic or electrical fault

When the LOWER button is pressed, the lowering valve should emit a 'click' sound as it opens. If it does not, the problem may be either a hydraulic or electrical fault.

1. If the lowering valve coil is receiving an electrical signal but not opening, it may need to be cleaned:
    a. Remove the coil from the valve stem.
    b. Unscrew the lowering valve cartridge.
    c. Clean the cartridge with compressed air.
    d. Replace the lowering valve components by reversing this procedure.
2. Replace the lowering valve, and test to see if the carriage lowers correctly.

3. Run the machine through several lift/lower cycles to ensure the problem has been properly resolved before returning it to service. If the lowering valve is still not operating correctly, it may need to be replaced – contact your agent.

5.3.2.2 Mechanical fault

If the lowering valve is operating correctly (emits a 'click' sound when the LOWER button is pressed), the problem may be a mechanical fault.

1. Provide support for the carriage and stack of crates, either with a structure underneath or with a sling attached to a forklift or crane. Allow for it to fall no more than 50mm.

⚠ Never place any part of your body underneath the carriage unless it is securely supported.

2. Attempt to visually identify the cause of the jamming. The most likely causes are:
    a. A mast may have been bent or damaged.
    b. Lack of lubrication.
3. Rectify the problem by straightening and/or realigning the mechanical components as required. If the mast is bent, you may need to contact your agent for support.
4. Run the machine through several lift/lower cycles to ensure the problem has been properly resolved before returning it to service.

5.4 Electrical System

The Crate Wizard is fitted with one 12V 55Ah deep-cycle sealed gel battery, a digital smart charger, and a series-wound 12VDC motor. The control voltage is 12VDC.

The motor only runs when the both RAISE buttons, or both OPEN buttons are pressed. The carriage is lowered by gravity alone, and the clamp-arms are closed by gas struts. As a rule, one full charge is sufficient to lift 20 tonnes of material, but this is dependent on the lifting height and the condition of the battery.

5.4.1 Localisation

The Crate Wizard is fitted with a digital smart charger which accepts any 1-phase power input between 84-264 Volts and 50-60 Hertz. This means the machine can be charged using standard 1-phase mains power in almost any country around the world. A power plug adapter may be required in some cases.

5.4.2 Battery indicator and hour meter

The Crate Wizard is fitted with a digital battery indicator, mounted on the body of the machine. This unit also contains an hour meter.

⚠ When the indicator is showing one or two bars of charge, the machine should not be used and should be placed on charge as soon as possible.
⚠ Attempting to operate a machine with flat battery may cause the circuit breaker on the battery cable to blow (see Section 5.4.8). It may also damage the battery.

5.4.3 Battery charging

To recharge the battery, simply **connect the supplied IEC power lead into the socket on the side of the machine, and into a standard 1-phase power outlet**.

A full charge from flat normally takes about 8 hours.

⚠ The onboard smart charger automatically adapts to different input currents, manages the charging cycle to maximise battery life, and prevents overcharging.

5.4.4 Battery and battery care

The Crate Wizard is fitted with a single 12V 55Ah deep-cycle sealed gel battery which delivers 12VDC (nominal) to the motor and control systems.

The battery is maintenance-free and designed to last up to five years. However, battery life is dependent on several factors, including the number of charge/discharge cycles, the depth of discharge and environmental conditions.

5.4.4.1 Maximising battery life

To maximize the battery life on your machine, observe the following rules.

- Place the battery on charge every night.
- Do not allow the machine to sit with a flat battery for more than 24 hours.
- Do not attempt to operate the machine when the battery is flat.

⚠ The battery is supplied with a 12-month manufacturer's warranty, separate from the warranty on the rest of the machine.

5.4.5 Smart charger

The Crate Wizard is fitted with a digital smart charger which accepts any 1-phase power input between 84-264 Volts and 50-60 Hertz. The maximum current draw is 3 Amps.

The charger delivers output of up to 10 Amps continuous current at 13.6VDC, for a maximum power output of 136 Watts.

⚠ The charger is in an enclosed plastic case and is protected against short-circuit, current overload, over-voltage and over-temperature.

5.4.6 IEC power lead

The Crate Wizard uses an IEC C13 power lead, which connects to the IEC C14 socket on the side of the machine. IEC leads are used for many household appliances and are widely available from electronics stores. They are sometimes known as 'kettle leads'.

5.4.7 Emergency Stop

The Crate Wizard is fitted with a heavy-duty Emergency Stop button which also functions as a battery-isolation switch. This disconnects the battery from the electrical systems and should be pressed if the machine is to be placed in storage, or if the powerpack cover needs to be removed.

5.4.8 Circuit breaker

The Crate Wizard is fitted with an auto-resetting circuit breaker on the battery cable. The breaker is triggered by excessive current draw and helps to prevent potential damage caused by operating the machine with a flat battery.

The circuit breaker will automatically reset after a short time once it has been triggered.

⚠ Because the current draw of the motor increases as the battery voltage drops, operating the machine with a flat battery may trigger the circuit breaker.

5.5 Hydraulic System

5.5.1 Powerpack

The hydraulic powerpack is supplied as a complete unit. The motor, pump, oil tank, and all control valves are mounted into the centre manifold.

5.5.2 Control valves

The hydraulic system has four primary control valves.

5.5.2.1 Check valve

This is a one-way valve which prevents oil from flowing back through the pump when the motor is stopped.

5.5.2.2 Pressure-relief valve

This is a spring-loaded valve which allows oil to flow back into the reservoir when the hydraulic pressure exceeds its rated limit – usually from lifting an overweight stack of crates, or from operating the machine when the carriage is already at the top of the cycle.

5.5.2.3 Lowering valve

This is a solenoid-operated valve which opens when the LOWER button is pressed and allows oil to flow back to the reservoir, lowering the carriage.

5.5.2.4 Lowering-speed valve

This is a pressure-compensating valve which limits the maximum flow rate of oil passing back to the reservoir through the lowering valve – thus regulating the descent speed of the carriage (regardless of the weight of the crates).

5.5.3 Lift Ram

The lift ram is a single-acting displacement type, very robust and reliable, but easy to maintain should the need arise. A hydraulic line runs from the powerpack to the lift ram.

5.5.4 Open Ram

The open ram is a single-acting displacement type, very robust and reliable, but easy to maintain should the need arise. It operates in opposition to the six gas struts (Section 5.6.1), forcing the clamp-arms apart and thus releasing the crate(s).

A flexible hydraulic line runs up the mast from the powerpack to the open ram.

5.5.5 *Hydraulic fluid*

The hydraulic system is designed to use mineral oil-based hydraulic fluid with a viscosity grade of 22 (ISO VG22). Fluid with a higher viscosity grade may be used, but will reduce the lowering speed of the carriage and increase the likelihood of jams.

The hydraulic fluid should have physical lubricating and chemical properties as specified by:

- Mineral Oil Based Hydraulic Fluids HL (DIN 51524 part 1)
- Mineral Oil Based Hydraulic Fluids HL P (DIN 51524 part 2)

⚠ Ensure the carriage is completely lowered before replacing the hydraulic fluid.
⚠ The hydraulic reservoir has markings showing the recommended fill level. Do not fill beyond this level unless specifically advised to do so by the manufacturer.

5.5.6 *Maintenance*

As the pump only runs while the carriage is lifting, it can take more than 500 cycles to reach one hours' run time of the powerpack. The oil should be replaced, and the suction filter cleaned after 12 months, then after every 100 hours of run time. The lowering valve should also be removed and cleaned at this time.

5.6 Mechanical Systems

5.6.1 *Gas struts*

The lifting carriage is fitted with six non-powered gas struts which pull the clamp-arms together so as to hold a stack of crates. These struts are opposed by the 'open ram' (Section 5.5.4) which, when operated, forces the clamp-arms apart.

⚠ This fail-to-safety feature means the clamp-arms will continue to hold a stack of crates securely, even in the event of a failure in the hydraulic or electrical systems.

5.6.2 *Bottom crate catches*

The clamp-arms are fitted with two pivoting catches that are designed to 'hook' the bottom crate when the arms are clamped, as a safeguard to prevent crates from slipping free.

The catches can pivot a small amount, to reduce the chance of them unintentionally catching on crates while the arms are open.

⚠ The bottom crate catches should be adjusted by a qualified person to suit the particular crates being handled.

5.6.3 *Dolly guides*

The dolly guides are designed to ensure the dollies are centrally located between the outriggers, to assist with alignment when placing crates on top of an existing stack. The guides can be easily removed if not required.

5.6.4 *Crate guides*

The crate guides are an optional, simpler version of the dolly guides and perform the same function when the bottom crates are on the ground.

6.Assembly, Handling, Transport & Storage

6.1 Assembly

The Crate Wizard is usually delivered fully assembled.

⚠ In some cases, a sealed 'transit plug' is fitted to the hydraulic reservoir to prevent oil leaks during shipping. This must be replaced with the supplied 'breather plug' before the machine is operated, or the reservoir will be damaged.

6.2 Moving

When the machine is standing upright it may be easily moved on its wheels, using the steering tiller. To ensure stability, the lifting carriage should be positioned just off the ground when moving the machine.

⚠ Extra care should be taken when moving the machine on sloping ground.

6.3 Lifting

If the machine needs to be lifted for any reason, carry out the following procedure:

1. Confirm the weight of the machine on the rating plate and check that the lifting equipment that is to be used has sufficient capacity.
2. Affix a lifting sling or chain around the top frame cross-member (or to the lifting lugs if provided).
3. Use one person to operate the lifting equipment, and at least one other person to watch for obstructions and hold the machine steady if required.
4. Lift, move and lower the machine into place, ensuring it always remains upright.

⚠ Standard machines weigh between 200kg and 250kg. Always verify the weight of the machine on the rating plate, and check the lifting equipment that is to be used has sufficient capacity.

⚠ Never stand or reach underneath the machine while it is being lifted.

6.4 Transportation

Carry out the following procedure to prepare the machine for transport:

1. Apply the brake and press the Emergency Stop.
2. If possible, use lifting equipment to lie the machine onto its **left-hand side** on a wooden pallet, and securely strap it in place.
3. Load the machine onto the trailer or truck deck.
4. Tie the machine into position using marked tie-down points and strops rated to at least 1000kg. Ensure it is fastened against lateral forces from any direction.

⚠ To prevent oil leaks and damage to the guarding, never lie the machine over onto its front or back for transport.

6.5 Storage

If the machine is not to be used for a period of two months or more, it should be stored in a clean, dry place with good ventilation, at temperatures not below 0℃. Before placing the machine into storage, carry out the following procedures:

1. Clean the machine thoroughly.
2. Carry out several full lifting cycles, then lower the carriage to the ground.
3. Apply a thin layer of silicone lubricant to exposed surfaces of moving parts.
4. Charge the battery and apply a suitable contact oil to the electrical contacts.
5. Press the Emergency Stop.
6. Remove the key and store in a safe location.

7. Safety Inspections

It is recommended to conduct regular scheduled inspections of the Crate Wizard. This helps to ensure operator safety and extend the service life of the machine.

The inspection schedule is divided into two parts: monthly inspections and annual inspections. The inspection procedures are described in the following pages, along with logs for recording the results.

- ⚠ It is strongly recommended that that regular scheduled inspections be carried and recorded as described in this section.
- ⚠ Operators should immediately stop using the machine and request an inspection if any fault or abnormal operation is observed.

7.1 Pre-inspection checklist

1. Wear suitable Personal Protective Equipment (PPE), including safety boots and protective eyewear.
2. Ensure there are no ignition sources nearby.
3. Lower the cradle and remove bin.
4. Turn off the key switch and unplug the charging lead.
5. Remove the powerpack cover.
6. Clean the powerpack and electric circuitry with compressed air.
7. Always use height safety equipment when servicing elevated areas.

7.2 Monthly inspection

The following inspection should be carried out monthly, and the results recorded in the log.

Monthly Inspection Checklist			
Category	**No.**	**Item**	**Check**
General	1	Entire machine	Visually inspect for dented or broken parts. Conduct a complete lifting cycle and check for any faults or abnormal behavior.
Hydraulic systems	2	Hydraulic ram	Check there are no oil leaks.
	3	Oil reservoir	Check the level of hydraulic fluid and top up if necessary, in accordance with specs in Section 5.5.6.
Safety systems	4	Dual-hand controls	Check that dual-hand controls operate correctly, and machine stops instantly when one button is released.
Mechanical systems	5	Inside mast	Lightly lubricate with silicone spray.
	9	Wheels	Check that the wheels are running smoothly and the footbrake is working correctly.

Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used

7.3 Annual inspection

The following inspection should be carried out annually, and the results recorded in the log.

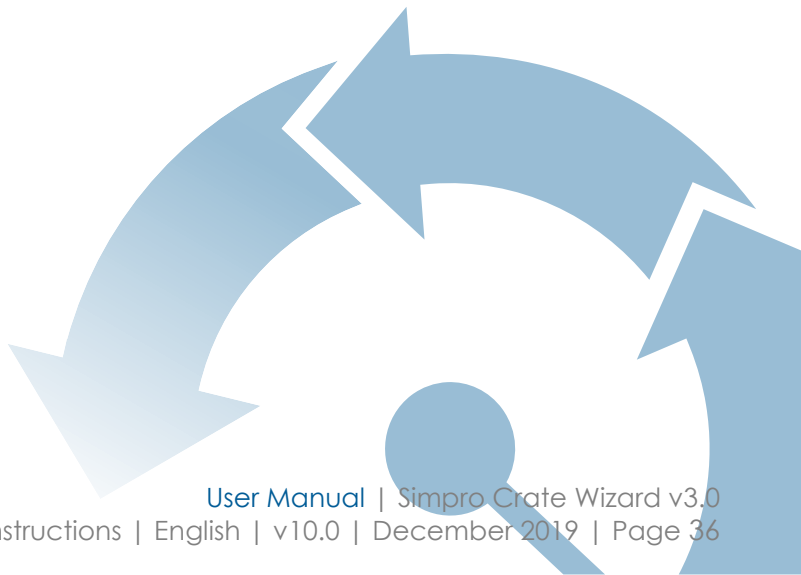
Annual Inspection Checklist			
Category	**No.**	**Item**	**Check**
General	1	Entire machine	Visually inspect for dented or broken parts. Conduct a complete lifting cycle and check for any faults or abnormal behaviour.
Hydraulic systems	2	Hydraulic ram	Check there are no oil leaks.
	3	Oil reservoir	Drain and replace the hydraulic fluid, in accordance with the specifications in Section 5.5.6. Clean the oil suction filter.
	4	Lowering valve	Remove and clean.
Electrical systems	5	Power lead	Check that the power lead is in good condition, with no frayed or damaged insulation.
Safety systems	6	Dual-hand controls	Check that dual-hand controls operate correctly, and machine stops instantly when one button is released.
	7	Safety Labels	Check that all warnings labels, guides etc are attached and clearly legible.
Mechanical systems	8	Mast and cradle	Not twisted or damaged. No cracked or broken welds.
	9	Inside mast	Lightly lubricate with silicone spray.
	13	Wheels	Check that the wheels are running smoothly, and the brake is working correctly.

Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used

8. Spare Parts

The following table includes only the most common Crate Wizard spare parts as at the time of publication.

Diagram Ref.	Part Number	Description
-	0140120002	Ram-end Roller
-	0790050003	Key Switch
-	0880050017	12vdc motor relay
-	0250090064	12vdc lowering solenoid coil
-	0410050039	Battery Charger
-	0090090006	Ram Seal
-	xxxxxxxxxxx	Additional parts are to be added in later editions of the manual.



9. Warranty

9.1 Definitions

1. "Simpro" means Simpro Handling Equipment Limited, New Zealand Registered Company No. 1827916.
2. "Agent" means a person or company authorized by Simpro to sell a Product.
3. "Service Agent" means a person or company authorized by Simpro to repair a Product.
4. "End User" means the first purchaser of a Product from a Sales Agent authorised by Simpro to sell the Product.
5. "Warranty" means the commitment that Simpro has to guarantee the workmanship and componentry to any End User of Products manufactured and sold by Simpro.
6. "Warranty Claim" means an application from an Agent to Simpro to be reimbursed for expenses relating to repairs done to remedy a fault with a Simpro Product.
7. "Warranty Period" means the length of time that Simpro undertakes to guarantee a Product.
8. "Back to Base" means that the costs associated with the transporting of a Product between the Service Agent and the End User is the End Users responsibility.
9. "Standard Products" means any Product displayed as a standard product on the Simpro website, https://simpro.world/.
10. "Part" and "Parts" refer to components of a Product.
11. "Minor Fault" means a fault or defect that requires less than one hour to rectify
12. "Instruction Handbook" means a document so titled that provides brief information and guidance on the operation of the Product for commonly performed functions.
13. "Service Manual" means a document so titled that provides comprehensive information and guidance for service, repairs and maintenance.
14. "Warranty Registration Process" means the process of an End User registering their product with Simpro. This may be done using the web form here: https://simpro.world/support/warranty-registration
15. "Application for Warranty Consideration Form" means the system used to file a Warranty Claim with Simpro. This may be done using the web form here: https://simpro.world/support/warranty-claim.

9.2 Coverage

1. Simpro provides a 12 month Back to Base Warranty on all Standard Products unless alternative terms have been agreed to in writing.
2. The Warranty terms and conditions on custom-built and non-standard machines are generally specified on quotations, and placing an order implies acceptance of the Warranty terms. If no specific Warranty details have been provided, the standard terms and conditions will apply.
3. The 12-month Warranty period shall be taken from the date the machine first leaves the Agent's premises, whether sold or just supplied for trial. The Agent shall keep accurate records of the date of all machine trials, sales. etc.
4. Simpro will, at its option, repair or replace any items that fail or prove defective within the Warranty period.
5. Simpro's liability under the terms of this Warranty shall be limited to remedying any fault that occurs on machines it has manufactured or supplied, and shall not cover any consequential loss or damage.
6. The Warranty on battery is for 6 months only. Information on maximising the life of your battery may be viewed here: https://simpro.world/connect/blog/deep-cycle-battery-watts-it-all-about

9.3 Exclusions

1. Simpro will not recognise a Warranty Claim against a machine where payment to Simpro for that machine is outstanding. If a Warranty Claim is made before payment is due, the full payment must be made on the due date. The Warranty Claim, if accepted, will be credited at a later date.
2. Warranty Claims may not be recognized unless the Warranty Registration Process has been completed. If not done at the time of sale, this should be done at the time of the Warranty Claim. If warranty registration has not been completed, proof of purchase may be required.

3. Damage caused or contributed to by misuse, abuse, accident, unauthorised repairs or modifications, or failure to use the machine in accordance with instructions is specifically excluded.
4. Travelling time and mileage are specifically excluded from the Simpro warranty coverage. However under certain circumstances Simpro at its discretion may contribute to these costs. Authorisation must be obtained from Simpro prior to any such Warranty Claim. This does not prohibit an Agent offering more extensive Warranty cover, outside of this Warranty, as negotiated between the Agent and the End User.

9.4 End User claim procedure

1. Where a fault or breakdown appears to have occurred the End User should, if applicable, first consult the Quick Troubleshooting Guide section of the User Manual provided with each machine, to ascertain the cause of the fault and remedy if possible. This information may also be accessed on the Simpro Support website: http://support.simpro.world.
2. If the fault is not able to be remedied, the End User should contact the Agent who sold the machine, and explain as fully as possible the fault, including all relevant factors such as:-
    1. Did the fault occur suddenly or has it been giving trouble over some time?
    2. Was the machine being used at the time?
    3. Is the fault intermittent?
    4. Are the battery fully charged?
    5. If repair is urgent, and the Agent cannot be contacted, the End User may contact Simpro direct.

9.5 Agent claim handling procedure

1. Upon receiving notification of a fault, the Service Agent should attempt to determine the cause and a course of action before going to see the machine.
2. The Service Agent should contact Simpro for assistance in identifying the fault, if it is not apparent. This step is important, so that if a site visit is necessary, the correct tools and spare Parts can be taken. It is also important to establish whether there may have been any negligence, misuse or an accident that contributed to or caused the fault.
3. Parts requiring replacement will be supplied by Simpro free of charge; in some cases, it may be necessary to source Parts locally if needed urgently, but Simpro must authorize this if the cost of the item exceeds $50.00 and is to be charged to Simpro.
4. If the fault is not a Minor Fault, the Agent must notify Simpro and receive authorization to proceed before the repair work is done. Simpro will assist in every way possible, including discussing the problem directly with the End User if necessary, to determine the best method of effecting the repair in the shortest time possible.
5. Upon completion of the repair to an acceptable standard, the Agent shall complete the Application For Warranty Consideration Form and include copies of any invoices for labour, and any Parts supplied.
6. The cost of Warranty repairs is not to be deducted from any payments due to Simpro, unless Simpro issues a credit note clearly stating the amount and which invoice it relates to.
7. Simpro undertakes to be reasonable in respect of all Warranty repairs undertaken by Agents, but reserves the right to decline payment for:-
    1. Work done or materials replaced that were not authorized in advance by Simpro.
    2. Work not done to an acceptable standard.
    3. Work taking an unduly long time, due (in part or in full) to the lack of knowledge or skill of the serviceman or the Agent. The time allowed for repair work will be based on Simpro's assessment of what a reasonably skilled tradesman would take. Full Service Manuals are available on request at any time from Simpro and all service visits should be conducted with a Service Manual at hand.

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 has been manufacturing and retailing smart lifting solutions for over thirty years.

From humble beginnings as a small engineering firm in Auckland, New Zealand, the company has grown to become a leading supplier of handling equipment for niche applications – such as bin-lifting, tipping and handling machines, crate stackers and goods lifts.

Simpro products play an unobtrusive but essential role for thousands of companies around the world, in industries as diverse as waste management, food processing, resource extraction and pharmaceutical manufacturing. They are available through a network of agents which spans the globe, and are backed by a sophisticated in-house design and fabrication capability.

Simpro is a family-owned company, registered with the New Zealand Companies Office as Simpro Handling Equipment Ltd, company no. 1827916.

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