

// User Manual



Original Instructions // English // v126.0 // July 2023

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This document belongs to the machine specified below, and should accompany the machine in the event that it is leased, sold, or otherwise transferred.

Model	Serial	Owner	Delivery Date

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)

1 litre (L) = 1000 cubic centimetres (cc) = 0.264 US liquid Gallons (Gal)

1 kilopascal (kPa) = 0.01 bar (bar) = 0.145 pounds per square inch (psi)

The following stylistic conventions are used throughout this document:

Point of interest

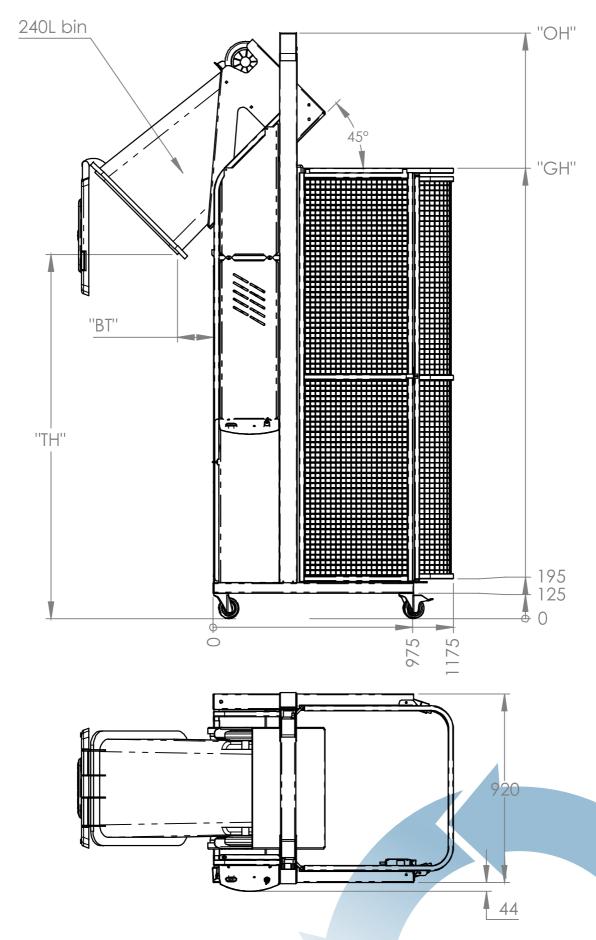
Safety hazard

§ Section reference (hyperlink in PDF edition)

Simpro partcode (hyperlink in PDF edition)

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Dumpmaster General Layout

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I. Product Overview

Congratulations on your purchase of a Simpro
Dumpmaster bin-tipping machine. In production for more than three decades, Dumpmaster may be the most sophisticated and versatile bin lifter on the market today.

With a modular design, Dumpmaster can be used in numerous applications, ranging from emptying rubbish bins into skips to pouring food ingredients into mixers. No matter the application, Dumpmaster continues proving to be a safe, reliable, and economical solution, for year after year.

1.1 Key features

Key features of Dumpmaster include:

- A unique tipping action whereby bins are lifted straight up, and then gently rolled forward around the lip of the skip or hopper being emptied into. Benefits of this design include a small 'footprint', and a wide range of tipping heights available, from 700mm to more than six metres;
- 2. A standard weight capacity of 250kg;
- 3. A reliable, low-maintenance design;
- 4. A hot-dip galvanised frame and cradle (also available in 304-grade stainless steel);
- 5. Standard cradles to suit a variety of wheelie bins, rollout carts, Eurobins, drums, and containers;
- 6. A modular design which can be easily modified to suit a wide range of non-standard bin sizes, shapes, and weights.

1.2 Construction

Dumpmaster consists of a steel frame with vertical masts and stabilizing legs, bin cradle, hydraulic ram, hydraulic powerpack, powerpack cover, control panel, electronic control systems, guarding, castor wheels, and power lead or charging cable.

1.3 Mechanism

When the RAISE button is pressed, a hydraulic ram is extended, which pulls on an arrangement of chains, causing the bin cradle to travel vertically in the masts. The cradle is inverted at the appropriate height by an arrangement of arms, rollers, and a curved track.

The ram is supplied by a hydraulic power pack, which may have a 3-phase, 1-phase, battery, or compressed-air motor. Electrical, hydraulic, and / or mechanical control mechanisms allow the operator to raise or lower the bin in a controlled manner.



1.4 Safe Working Load

The Safe Lifting Capacity of the standard Dumpmaster is 250kg (550lb).

- A Safe Working Load (SWL) is a gross figure, referring to the weight of the bin, its contents, and any other objects placed on the cradle.
- A Custom machines may be specified with different Safe Working Loads. The rating plate should be the first point of reference to determine SWL on any given machine.

f A Never attempt to lift bins that are heavier than the factory-specified Safe Working Load.

1.5 Duty cycle

The duty cycle of Dumpmaster depends on the type of powerpack that is fitted to the machine, environmental factors, and the manner in which the machine is used. The figures provided below are indicative only.

Power supply	Duty Cycle (tipping ~100kg bins at 1800mm)				
rower supply	Net throughput	Number of bins	Units		
Battery, 24V/20Ah GEL*	10,000kg	100 bins	Per charge		
Battery, 24V/20Ah GEL with continuous charge	3,000kg	30 bins	Per hour		
Battery 24V/20Ah GEL with solar panel kit	3,000kg	30 bins	Per day [†]		
Mains, 3-Phase ~415VAC	6,000kg	60 bins	Per hour		
Mains, 1-Phase ~230VAC‡	4,000kg	40 bins	Per hour		

^{* 2}x 12V/20Ah batteries in series

Power supply specifications can be found on the machine's rating plate.

1.6 Service life

The nominal service life of Dumpmaster is as follows:

Average Gross Bin Weight	Nominal service life
< 100kg	200,000 cycles
100kg – 200kg	150,000 cycles
200kg – 250kg	100,000 cycles
250kg – 300kg	75,000 cycles

1.7 Noise emissions

The noise emissions of Dumpmaster do not typically exceed ~60 dB(A) at the operator's ear. Hearing protection is recommended if operating the machine for extended periods.

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.

 $[\]dagger$ Subject to weather, latitude, and panel orientation; see §3.4.8

[‡] Deprecated since 2019

1.8 Environmental restrictions

Dumpmaster may be used indoors or outdoors. However, the following restrictions apply:

- 1. Minimum floor area 2 square metres, with a clear passage to exits;
- 2. Height above sea level not more than 1000m;
- 3. Ambient temperature not higher than +40°C and not lower than -10°C;
- 4. At ambient temperatures above 35°C, the relative humidity should not exceed 50%; at lower temperatures, higher relative humidity is permitted;

Never operate Dumpmaster in explosive, corrosive, acidic or alkaline environments.

1.9 Ingress protection

Item	IP Rating
Push buttons, switches, and lamps	IP66
Door interlock	IP66
Coded magnetic switch	IP66
Motor	IP54 (additional protection is provided by covers)
Overall	IP56 (optionally upgraded to IP66 or IP69)

1.10 Notes

- 1. This User Manual describes approved procedures for the operation, maintenance, and routine inspection of the Simpro Dumpmaster hydraulic bin-tipping machine.
- 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. In cases where a discrepancy exists between the manual and the actual product, the manual is to be used as a reference only.
- 6. Contact your authorized Simpro agent if any problems or faults are encountered with the machine.
- 7. Errors in this manual should be reported by email to info@simpro.world.





2. Operating Instructions

Before the machine is used for the first time, a site-specific Hazard and Risk Assessment should be completed as per §5.3.

2.1 Before operation

Before operating a Dumpmaster, make sure that it is stable and safe to use as follows;-

- 1. **CHECK** that the machine is on firm ground with a slope of not more than 8%.
- 2. **CHECK** that all covers and guard panels are in place.
- 3. CHECK that both wheel brakes are applied.
- 4. **CHECK** that all personnel other than the operator are well clear of the machine.
- 5. **CHECK** that the key is inserted and turned to the ON position.
- 6. **CHECK** that the battery indicator (if fitted) shows an acceptable level of charge.

2.2 Emplacing and removing bins

Dumpmaster can be fitted with a range of different cradles, allowing different types of bin to be emptied. The cradles are designed to allow the bins to be emplaced and removed easily, while also holding them securely throughout the tipping cycle.

In the following section, use the image on the right to identify the cradle fitted to your Dumpmaster, and follow the corresponding instructions to emplace and remove bins.

A Bins which are not correctly emplaced in the cradle may be damaged by the frame and guarding while being lifted, or fall out of the cradle when inverted.

2.2.1 Type-E cradle

The Type-E cradle can be used to empty almost all 80L, 120L, 140L and 240L wheelie bins, as per §3.3.1.

2.2.1.1 Emplacing bins

Open the door and place the wheelie bin onto the cradle. For 240L wheelie bins, both wheels should be located in a catch, one on each side of the cradle. For smaller bins such as 80L, 120L and 140L, only the left-hand wheel should be located in a catch.

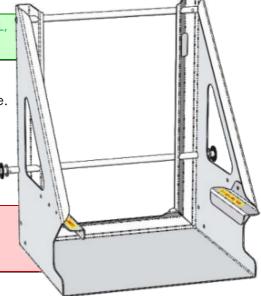


A If the bin is difficult to emplace in the cradle, or the wheels appear to be jamming against the wheel catches, see §3.3.1.

When the bin is correctly emplaced, close the door.

2.2.1.2 Removing bins

Open the door and pull the wheelie bin backwards out of the cradle.



The Type-E cradle (also known as the standard cradle) consists of a steel bucket pressing with wheel catches mounted on each side.



2.2.2 Type-C cradle

The Type-C cradle can be used to empty almost all 80L, 120L, 140L, 240L and 360L wheelie bins, as per §3.3.2.

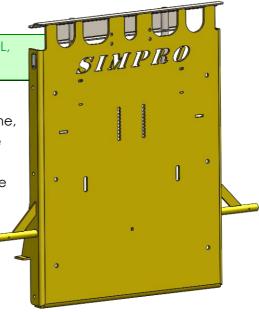
2.2.2.1 Emplacing bins

Open the door and place the wheelie bin into the machine, centred and firm against the cradle backplate. Take care that the lifting teeth are properly hooked into the bin combing; smaller bins such as 60L and 80L may need to be tilted or lifted slightly to ensure a proper 'catch'.

When the bin is correctly emplaced, close the door.

2.2.2.2 Removing bins

Open the door and pull the wheelie bin backwards out of the cradle. The bin may need to be tilted slightly to disengage the comb from the cradle 'teeth'.



The Type-C cradle consists of a powdercoated steel backplate with a gravity-locked comb lift mechanism.

2.2.3 Type-A cradle

The Type-A cradle can be used to empty almost all 24-Gal 32-Gal, 48-Gal, 64-Gal, and 96-Gal carts, as per §3.3.3.

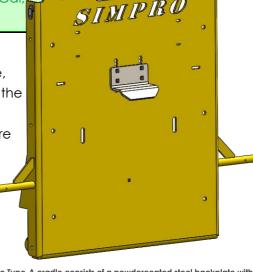
2.2.3.1 Emplacing bins

Open the door and place the rollout cart into the machine, centred and firm against the cradle backplate. Make sure the cart is correctly engaged with the catches on the cradle; some carts may need to be tilted or shaken slightly to ensure a proper 'catch'.

When the cart is correctly emplaced, close the door.

2.2.3.2 Removing bins

Open the door and pull the rollout cart backwards out of the cradle. Some carts may need to be tilted or shaken slightly to disengage them from the lifting catches.



The Type-A cradle consists of a powdercoated steel backplate with two adjustable bin catches.

2.2.4 Type-D cradle

The Type-D cradle can be used to empty almost all 200L and 300L Eurobins, as per §3.3.4.

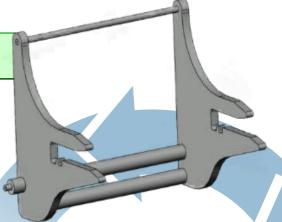
2.2.4.1 Emplacing bins

Open the door and wheel the Eurobin into the cradle, centred and firm against the cradle backplate. Make sure both trunnions are properly seated in the lifting arms.

When the Eurobin is correctly emplaced, close the door.

2.2.4.2 Removing bins

Open the door and pull the Eurobin backwards out of the cradle.



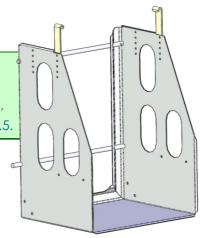
The Type-C cradle consists of two steel arms with counterweights and lasercut trunnion slots.

2.2.5 Type-X/CB/AB cradles

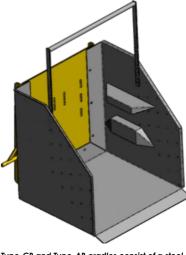
Type-X, Type-CB and Type-AB cradles can be used to empty various non-standard bins, buckets, drums, and containers, as per §3.3.5.

Open the door and place the bin, bucket, drum, or container onto the cradle, centred and firm against the cradle backplate.

When the bin is correctly emplaced, close the door.



Type-X cradles (also known as Combo Cradles) consist of a steel bucket pressing with attachment points for catches and packers.



Type-CB and Type-AB cradles consist of a steel bucket pressing with attachment points for catches and packers, mounted onto a Type-C or Type-A cradle backplate.

2.2.5.1 Removing bins

Open the door and pull the bin, bucket, drum, or container backwards out of the cradle.

2.3 Operating the controls

Dumpmaster can be fitted with a range of different control panels, depending on the operational and safety requirements of the machine. The controls are designed to be as simple and intuitive as possible, while providing the necessary functionality.

In the following section, use the image on the right to identify the control panel fitted to your Dumpmaster, and follow the corresponding instructions to operate the machine.

A The control panel is normally atop the powerpack cover, but on machines with a CAT3/CAT4 safety-monitoring system it is mounted on the door of the control cabinet.

A Improper operation of the controls can result in damage to the machine, the bin, and/or other property, and can place the operator and other personnel at risk of injury.

2.3.1 Standard Control Panel

How to operate a standard Dumpmaster.

- 1. **CHECK** the machine is safe to use as per §2.1.
- 2. **OPEN** the safety door.
- LOAD the full bin onto the cradle as per §2.2 then SHUT the safety door.
- 4. **PRESS AND HOLD** the UP button until the cradle reaches the inverted position.
- UP button DOWN button VOLTMETER KEY-SWITCH

The control panel on a standard Dumpmaster with a battery powerpack. Mains-powered machines have a similar control panel, but no voltmeter.

- 5. **RELEASE** the UP button and **WAIT** while the contents of the bin are emptied.
- 6. PRESS AND HOLD the DOWN button until the cradle returns to ground level.

A RELEASE the UP/DOWN button to stop the cradle at any time.

- 7. **OPEN** the safety door and **REMOVE** the empty bin as per §2.2.
- 8. **REPEAT** from step 2. as required.



2.3.2 Autocycle Control Panel

A How to operate an autocycle Dumpmaster.

2.3.2.1 AUTO MODE operation

- 1. **CHECK** the machine is safe to use as per §2.1.
- 2. TURN the CONTROL MODE switch to AUTO.
- 3. **OPEN** the safety door (if the door is locked, **PRESS** the DOOR UNLOCK button first).
- 4. **LOAD** the full bin onto the cradle as per §2.2 then **SHUT** the safety door.
- 5. **PRESS** the UP button for ~0.5 seconds.

6. WAIT while the bin is automatically lifted, emptied, and returned to ground level.



The control panel on a Dumpmaster with an autocycle controller and mains powerpack. Battery-powered machines have a similar control panel, but with a voltmeter and pushbutton CONTROL MODE selector.

▶ PRESS the EMERGENCY STOP button to stop the cradle at any time.

- 7. **OPEN** the safety door and **REMOVE** the empty bin as per §2.2.
- 8. **REPEAT** from step 3. as required.

2.3.2.2 MANUAL MODE operation

- 1. **CHECK** the machine is safe to use as per §2.1.
- 2. TURN the CONTROL MODE switch to MANUAL.
- 3. **OPEN** the safety door (if the door is locked, **PRESS** the DOOR UNLOCK button first).
- 4. **LOAD** the bin onto the cradle as per §2.2 then **SHUT** the safety door.
- 5. **PRESS AND HOLD** the UP button until the cradle reaches the inverted position.
- 6. **RELEASE** the UP button and **WAIT** while the contents of the bin are emptied.
- 7. PRESS AND HOLD the DOWN button until the cradle returns to ground level.
- 8. **OPEN** the safety door and **REMOVE** the empty bin as per §2.2.
- 9. **REPEAT** from step 3. as required.

A When the cradle returns to ground level, the safety door is unlocked for ~15 seconds.

PRESS the DOOR UNLOCK button to unlock the door for a further ~15 seconds if needed.

2.3.3 Joystick Control Panel

How to operate a Dumpmaster with a Variable Speed Drive and joystick.

- 1. **CHECK** the machine is safe to use as per §2.1.
- 2. **OPEN** the safety door.
- 3. **LOAD** the full bin onto the cradle as per §2.2 then **SHUT** the safety door.
- 4. **PRESS FORWARDS** on the joystick to lift the cradle at full speed until it starts to rotate.

SIMPLE

(KEY-SWITCH)

(UP/DOWN joystick)

The control panel on a Dumpmaster with a Variable Speed Drive and joystick. These features are only available on mains-powered machines.

- 5. ADJUST the joystick to reduce the cradle speed and empty the bin progressively.
- 6. PRESS BACKWARDS on the joystick until the cradle returns to ground level.

A RELEASE the joystick to stop the cradle at any time.

- 7. **OPEN** the safety door and **REMOVE** the empty bin as per §2.2.
- 8. **REPEAT** from step 2. as required.

2.3.4 Safety-Monitored Control Panel

How to operate a machine with a CAT3/CAT4 safety-monitoring system.

Machines with a CAT3 safety-monitoring system can be operated in either MANUAL or AUTO mode, selected using the CONTROL MODE switch. In both modes, the safety system must be RESET before use, as set out below.

2.3.4.1 SAFE MODE reset

To reset the safety-monitoring system, close the safety door, release the E-stop, then press and hold the SAFE MODE RESET button for ~2 seconds. A diagnostic check will be carried out on the safety functions, with the following results;-

- 1. If no faults are detected, the SAFE MODE RESET button will stop glowing – this means that the system has entered READY MODE, and the machine can be operated.
- 2. If any faults are detected, the SAFE MODE RESET button will continue glowing - this means that the system has remained in SAFE MODE, and the machine cannot be operated until the fault has been found and rectified, as per §3.8.4.



(E-STOP) (CONTROL MODEL switch) (MASTER LOCKOUT) (CABINET LOCK)

The control panel on a Dumpmaster with a CAT3 safety-monitoring system. These features are only available on mains-powered machines

2.3.4.2 AUTO mode operation

- 1. **CHECK** the machine is safe to use as per §2.1.
- 2. TURN the CONTROL MODE switch to AUTO.
- 3. **OPEN** the safety door (if the door is locked, **PRESS** the DOOR UNLOCK button first).
- 4. **LOAD** the full bin onto the cradle as per §2.2 and **SHUT** the safety door.
- 5. **RESET** the safety-monitoring system as per §2.3.4.1.
- 6. **PRESS** the UP button for ~0.5 seconds.
- 7. WAIT while the bin is automatically lifted, emptied, and returned to ground level.

PRESS the EMERGENCY STOP button to stop the cradle at any time.

- 8. **OPEN** the safety door and **REMOVE** the empty bin as per §2.2.
- 9. **REPEAT** from step 3. as required.

2.3.4.3 MANUAL mode operation

- 1. **CHECK** the machine is safe to use as per $\S 2.1$.
- 2. TURN the CONTROL MODE switch to MANUAL.
- 3. **OPEN** the safety door (if the door is locked, **PRESS** the DOOR UNLOCK button first).
- 4. **LOAD** the bin onto the cradle as per §2.2 and **SHUT** the safety door.
- 5. **RESET** the safety-monitoring system as per §2.3.4.1.
- 6. PRESS AND HOLD the UP button until the cradle reaches the inverted position.



- 7. **RELEASE** the UP button and **WAIT** while the contents of the bin are emptied.
- 8. PRESS AND HOLD the DOWN button until the cradle returns to ground level.
- **RELEASE** the UP/DOWN button to stop the cradle at any time.
 - 9. **OPEN** the safety door and **REMOVE** the empty bin as per §2.2.
 - 10. **REPEAT** from step 3. as required.
- ⚠ When the cradle returns to ground level, the safety door is unlocked for ~15 seconds.
 PRESS the DOOR UNLOCK button to unlock the door for a further ~15 seconds if needed.

2.4 Battery charging

Battery Dumpmasters should be recharged anytime the voltmeter reads less than 24 Volts. The procedure to recharge the batteries is as follows;-

- 1) Place the machine in a secure area and lock both foot-brakes.
- 2) Connect a 1-phase extension cord into the IP66 appliance inlet on the side of the machine (opposite the control panel).
- 3) Connect the extension lead into a 1-phase power outlet, and turn the wall switch ON.
- 4) Wait while the batteries are recharged. If the batteries a completely flat, a full charge will take around four hours. The machine can be used while being recharged.
- The onboard charger automatically adapts to different inputs (85-264VAC 50/60Hz 1-ph), manages the charging cycle to maximise battery life, and prevents overcharging.
- For optimum battery life, Dumpmaster should be placed on charge overnight and on weekends (even if the batteries are already fully charged), as per §3.4.3.1.
- The charger delivers enough power to empty a 100kg bin in about 3 minutes, which means that a battery-powered Dumpmaster can be left plugged in and used as a mains-powered machine, as per §1.5.



2.5 Safety norms

The following safety norms must be observed for the safe use of a Dumpmaster bin lifter.

Only trained and authorised personnel may use the machine. Operators must read and obey all instructions displayed on the machine. Never operate the machine on soft ground, or ground with a slope ratio greater than 1:12. Never operate machine on the edge of a raised dock or platform, unless designed for that application. Never operate the machine with any covers or guards removed. Never attempt to empty the contents of closed-top drums, unless the machine is securely bolted down. All persons other than the operator must keep at least two metres clear while the machine is in use. Always keep hands and feet well clear of the bin and cradle when operating. Never place limbs, feet or foreign objects under the side guards or safety door. Never attempt to empty over-filled bins, or bins that weigh more than the machine's rated capacity.



Before connecting machine to mains supply, ensure voltage and frequency correspond with that listed on the rating plate. Do not use an extension lead longer than 15 metres to connect the machine to mains power. Do not operate if power lead, insulation or power plugs are damaged. Do not connect a damp power plug or socket. Ensure the power supply 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.

3. Care and Maintenance

Dumpmaster is designed to give many years of service with minimal maintenance. In the event a fault or malfunction does occur, refer to the Quick Troubleshooting Guide in §3.1 before contacting your Simpro agent for support.

- A Contact your Simpro agent if repair or service work is required.
- All repair and service work must be carried out by qualified, authorized personnel.
- A 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.

3.1 Quick Troubleshooting Guide

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

Problem	Possible Causes	Remedy	See also	
	Flat battery	The battery needs to be charged if voltmeter reads less than 24 volts.	§2.4 §3.4.3 \$ Battery 0250050004	
The machine	Triggered circuit breaker (60A fuse on older models)	Wait 1-2 minutes for circuit breaker to auto-reset. Avoid operating the machine with a flat battery.	§3.4.5 Breaker 0790050374	
will not lift bins, and the	Faulty up/down switch or wiring	Check and rectify. Replace switch if necessary.	# Up/Down Switch 0790050454	
motor does not run	Faulty 24VDC motor solenoid or 415VAC motor contactor	Solenoid/contactor should 'click' when the UP button is pressed – if not it may need to be replaced.	\$ Solenoid0880050015\$ Contactor0250050069	
	Interlock switch on door not working	Check interlock and wiring – replace if necessary.	§3.8.3 Interlock 0790050408	
The machine will not lift	Bin too heavy	Remove material to reduce weight.	§1.4 §3.3.6.1	
bins,	Pressure-relief valve set incorrectly	Contact your agent for instructions on how to adjust the valve.	§3.7.1.2	
although the motor runs	3-phase motor running backwards	Switch two of the phase wires in the power plug or inlet.	§3.5.2	
Cradle will	Faulty up/down switch, wiring, or lowering valve coil	Lowering valve should 'click' when the DOWN button is pressed – if not, check the up/down switch, wiring and lowering valve coil.	§3.3.7.1 \$ Up/Down Switch 0790050454 \$ Lowering Valve Coil 0250090067	
down from the fully raised position	Cradle jamming in mast	Spray inside of masts at top of slots. Smear grease on top of the curved tipping tracks. Lubricate roller arm at top of cradle.	§3.3.7.2	
	Lift ram jammed or seized	Contact your agent for support.	§3.7.4 DM1500/DM1800 0330090003	
Cradle jamming	Follower roller not turning freely	Lubricate roller; replace if necessary.	§3.3.7.2 Roller 0090120000 Bush 0140120000	
part-way down	Roller arm twisted or cradle sitting out of level	Check and straighten roller arm; replace if necessary.	§3.3.7.2 \$\$ Single 0640200005 \$\$ Double 0640200003	



3.2 Cleaning

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

Do not clean the machine with a high-pressure water jet or waterblaster.

See §1.9 for IP ratings of the machine and major subcomponents.

If it is necessary to clean underneath the cradle, the control system can be modified to allow this while maintaining operator safety – contact your Simpro agent for assistance.

3.3 Cradle Systems

Dumpmaster can be fitted with a variety of cradles, all of which share a common arrangement of axles, sliding blocks and rollers. These components are simple and robust, and require little maintenance.

The cradle is not powered down – it is lowered only by gravity.

3.3.1 Type-E cradle

Dumpmaster is fitted as standard with a Type-E cradle, which lifts wheelie bins from the base and retains them using bolt-on wheel catches. The Type-E cradle can empty almost all 80L, 120L, 140L and 240L wheelie bins that comply with the EN840 standard.

- The Type-E cradle wheel catches are suitable for standard EN840 wheelie bins from brands such as Europlast, Sulo, ESE, Weber, Craemer, OnePlastics and Trident.
- If the wheel spacing on a 240L wheelie bin is slightly differently to the catch spacing, the wheels may jam against the catches, making it difficult to fully emplace the bin. If this occurs, the right-hand wheel catch can be simply removed all wheelie bins can be securely retained using the left-hand catch only.
- If the bin wheels are more than ~50mm wide, they may jam between the turndown on the wheel catch and the side of the cradle, making it difficult to fully emplace the bin. If this occurs, flat washers can be inserted onto the catch mounting bolts to increase the available spacing.

3.3.1.1 Type-E cradle maintenance

The Type-E cradle requires no regular maintenance, but the cradle axle can benefit from an occasional light application of silicone lubricant as per §3.9.



3.3.2 Type-C cradle

Dumpmaster can be optionally fitted with a Type-C cradle, which lifts and retains wheelie bins using a comb-lift mechanism. The Type-C cradle can empty almost all 80L, 120L, 140L, 240L and 360L wheelie bins that comply with the EN840 standard.

3.3.2.1 Type-C cradle maintenance

The Type-C cradle requires no regular maintenance, but the cradle axle can benefit from an occasional light application of silicone lubricant as per §3.9.

3.3.3 Type-A cradle

Dumpmaster can be optionally fitted with a Type-A cradle, which lifts and retains rollout carts using a bar and latch mechanism. The Type-A cradle can empty almost all 24-Gal, 32-Gal, 48-Gal, 64-Gal, and 96-Gal carts that comply with the ANSI Z245.60 (Type B) standard.

3.3.3.1 Type-A cradle maintenance

The Type-A cradle requires no regular maintenance, but the cradle axle can benefit from an occasional light application of silicone lubricant as per §3.9.

3.3.4 Type-D cradle

Dumpmaster can be optionally fitted with a Type-D cradle, which lifts and retains Eurobins using a trunnion-lift mechanism. The Type-D cradle can empty almost all 200L and 300L Eurobins that comply with the DIN9797 standard. A smaller version be fitted for 120L Eurobins.

3.3.4.1 Type-D cradle maintenance

The Type-D cradle requires no regular maintenance, but the cradle axle can benefit from an occasional light application of silicone lubricant as per §3.9.

3.3.5 Type-X/CB/AB cradle

Dumpmaster can be optionally fitted with a Type-X cradle, which can be adapted to lift and retain various non-standard bins, buckets, drums, and containers. The Type-X cradle has steel bucket pressing with a pattern of lasercut holes, allowing hoops, catches and packers to be attached in the required location.

Additionally, the Type-C and Type-A cradles can be fitted with a steel bucket pressing, allowing them to be adapted to lift and retain various non-standard bins, buckets, drums, and containers. The bucket pressing has a pattern of lasercut holes, allowing hoops, catches and packers to be attached in the required location.

Type-C and Type-A cradles with the bucket pressing installed are known respectively as Type-CB and Type-AB cradles.

- A When using a hoop retainer to empty bins, it should be positioned so that the bin falls no more than 25mm (1in) when the cradle is inverted.
- A hand truck, dolly or other lifting aid should be used when moving heavy non-wheeled containers such as 205L drums.

3.3.5.1 Type-X/CB/AB cradle maintenance

The Type-X, Type-CB and Type-AB cradles require no regular maintenance, but the cradle axle can benefit from an occasional light application of silicone lubricant as per §3.9.



3.3.6 Cradle jams while raising

Most cradle jams while raising can be classed as either an **overload fault** or **mechanical fault**. The problem can often be identified and resolved onsite, as set out below.

3.3.6.1 Overload fault

If the cradle starts to lift when the RAISE button is pressed, but then stalls out even though the motor continues to run, the problem may be an overload fault;-

- 1. Lower the cradle to ground level, open the door and remove the bin.
- 2. Manually remove some material from the bin to lighten it.
- 3. Try emptying the bin again.

A If the pressure-relief valve is set incorrectly, the cradle can stall even when lifting bins that are within the Safe Working Load listed on the rating plate. The pressure-relief valve may only be adjusted by competent personnel, with prior authorisation from Simpro.

3.3.6.2 Mechanical fault

If the cradle starts to lift when the RAISE button is pressed, but then stalls out even with no bin in the cradle, the problem may be a mechanical fault;-

- 1. If possible, lower the cradle to ground level, open the door and remove the bin.
- 2. Attempt to visually identify the cause of the jamming. The most likely faults are:
 - a. The lifting chain being derailed from the plastic chain guide at the top of the mast (accessed by removing the small cover at the top of the mast).
 - b. The mast being bent or damaged, jamming one of the mast rollers.
 - c. Part of one of the curved 'tipping tracks' being bent, interfering with the correct movement of the follower roller.
 - d. Lack of lubrication on the follower roller or the main cradle axle.
 - e. The cradle being out of level, due to poor adjustment of the lifting chains or a breakage.
 - f. The roller arm(s) being pressed too firmly against the 'tipping track' due to the cradle sitting out of level, or not being properly centred between the masts.
- 3. Lubricate, straighten and/or repair the components that are causing the jam. Contact your Simpro agent for support if required.
- 4. Close the door and test to see if the cradle raises correctly.
- 5. Once repairs are complete, carry out two complete tipping cycles to make sure the problem is fully resolved.

3.3.7 Cradle jams while lowering

Most cradle jams while lowering can be classed as either a **hydraulic fault**, **electrical fault**, or **mechanical fault**. The problem can often be identified and resolved onsite, as set out below.

The cradle is not powered down – it is lowered only by gravity.

See §3.7.5 for a schematic diagram of the hydraulic system.

3.3.7.1 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. Disable the safety interlock as per §3.8.3.1 and open the safety door.

- a. If the door needs to be opened to access the interlock, it can be unlocked by removing the ram cover beside the control panel, and manually activating the 'cradle lowered' microswitch at the base of the mast. The interlock should then be disabled, and the ram cover replaced before proceeding.
- b. If the machine has a CAT3 safety-monitoring system, the door can be unlocked by making specific control inputs contact your Simpro agent.
- 2. Attach a lifting sling to a forklift or crane, and slowly take the weight of the cradle.

 \triangle Never place any part of your body underneath the cradle unless it is securely supported.

- 3. Remove the powerpack cover.
- 4. Unscrew the fitting attaching the steel hydraulic pipe to the powerpack, and hold the end of the pipe over a container with a capacity of at least two litres.
- 5. Lower the cradle slowly with the forklift, collecting the oil in the container.
- 6. Once the cradle is fully lowered, remove the bin.
- 7. Reconnect the hydraulic pipe and fitting, and refill the oil tank.
- 8. Check that the lowering valve coil is receiving an electrical signal. An LED lamp should glow on the coil plug when the LOWER button is pressed. If it does not, check the up/down switch and wiring for loose or broken connections.
- 9. If the 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. Once cleaned, replace the lowering valve by reversing this procedure.
- 10. Close the door and test to see if the cradle lowers correctly.
 - a. If the machine has a CAT3 safety-monitoring system, before testing it will be necessary to re-enable the safety door interlock as per §3.8.3.1 and RESET the safety system as per §2.3.4.1.
- 11. If the problem persists, the lowering valve coil ** 0250090067* or cartridge ** 0250090055* may need to be replaced contact your Simpro agent for support.
- 12. Once repairs are complete, re-enable the safety door interlock as per §3.8.3.1 and carry out two complete tipping cycles to make sure the problem is fully resolved.

3.3.7.2 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. Disable the safety door interlock as per §3.8.3.1 and open the door.
 - a. If the door needs to be opened to access the interlock, it can be unlocked by removing the ram cover beside the control panel, and manually activating the 'cradle lowered' microswitch at the base of the mast. The interlock should then be disabled, and the ram cover replaced before proceeding.
 - b. If the machine has a CAT3 safety-monitoring system, the door can be unlocked by making specific control inputs contact your Simpro agent.
- 2. Provide support for the cradle, either with a structure beneath or with a sling holding it to a forklift or crane. Allow for it to fall no more than 50mm.



f A Never place any part of your body underneath the cradle unless it is securely supported.

- 3. Attempt to visually identify the cause of the jamming. The most likely faults are:
 - a. The lifting chain being derailed from the plastic chain guide at the top of the mast (accessed by removing the two cover-plates at the top of the mast).
 - b. The mast being bent or damaged, jamming one of the mast rollers.
 - c. Part of one of the curved 'tipping tracks' being bent, interfering with the correct movement of the follower roller.
 - d. Lack of lubrication on the follower roller or the main cradle axle.
 - e. The cradle being out of level, due to poor adjustment of the lifting chains or a breakage.
 - f. The roller arm(s) being pressed too firmly against the 'tipping track' due to the cradle sitting out of level, or not being properly centred between the masts.
- 4. Lubricate, straighten and/or repair the components that are causing the jam. Contact your Simpro agent for support if required.
- 5. Close the door and test to see if the cradle lowers correctly.
 - a. If the machine has a CAT3 safety-monitoring system, before testing it will be necessary to re-enable the safety door interlock as per §3.8.3.1 and RESET the safety system as per §2.3.4.1.
- 6. Once repairs are complete, re-enable the safety door interlock as per §3.8.3.1 and carry out two complete tipping cycles to make sure the problem is fully resolved.



3.4 Electrical Systems (battery)

A If you do not operate a battery-powered machine, please disregard this section.

Battery Dumpmasters are fitted with two 12V/20Ah deep-cycle GEL VRLA batteries in series, a digital smart charger, and a series-wound 800W/24VDC motor. The control circuit is 24VDC.

The motor only runs when the RAISE button is pressed; the cradle is lowered by gravity alone. As a rule, a full charge is sufficient to empty 10 tonnes of material, but this is dependent on a number of factors, including the tipping height and the age of the batteries.

3.4.1 International conformance

Dumpmaster is fitted with a digital smart charger which accepts 1-phase mains power at voltages of 85-264VAC and frequencies of 50/60Hz, with a maximum current draw of 3 Amps. This allows the machine to be charged using 1-phase power in almost any country or region.

3.4.2 Appliance inlet*NZ/AU 0790050272

Dumpmaster is fitted with an IP66-rated appliance socket on the right-hand side of the machine (opposite the control panel). This allows the machine to be charged using a regular 1-phase mains extension lead. The standard inlet is designed to suit IEC Type-I plugs, but other inlets can be specified.

3.4.3 Batteries \$ 0250050004

Dumpmaster is fitted with two 12V/20Ah deep-cycle GEL VRLA batteries in series, providing 24VDC (nominal) to the powerpack and control circuit. The batteries should be recharged anytime the voltmeter reads less than 24 Volts, as set out in §2.4.

The batteries are sealed and maintenance-free, with an operating lifetime of up to five years. However, battery life is dependent on a number of factors, including the number of charge cycles, the average discharge depth, and environmental conditions.

3.4.3.1 Maximising battery life

Observing the following rules can help to maximize the life of the batteries:

- Place the batteries on charge every night (not just when they are flat).
- Do not allow the machine to sit with flat batteries for more than 24 hours.
- Do not operate the machine when the voltmeter reads less than 24V.

Dumpmaster batteries are supplied with a 12-month warranty, separate from the warranty on the rest of the machine.

3.4.4 Battery charger \$ 0390050006

Dumpmaster is fitted with a digital multi-voltage charger, which accepts 85-264VAC 50/60Hz 1-phase input, drawing up to 3 Amps of current. The charger outputs up to 6 Amps at 27.2VDC, for a power rating of 160 Watts.

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



3.4.5 Circuit breaker 10790050374

Dumpmaster has an auto-resetting 75A circuit breaker fitted to the main battery cable. This cuts power to the machine if excessive current is being drawn, helping to protect the electrical systems. It automatically resets after a period of 1-2 minutes.

- A Because electric motors draw more current as the voltage decreases, operating the machine with a flat battery may trigger the circuit breaker.

3.4.6 Isolator switch \$\text{\$\pi^{\pi}\$} \text{}^{\pi 0210050002}

Dumpmaster is fitted with an isolator switch on the forward side of the powerpack cover. This switch isolates the batteries from the electrical systems, and should be turned OFF if the machine is to be placed in storage, or if the powerpack cover needs to be removed.

A On some older machines, the batteries will not charge if the isolator switch is turned OFF.
 3.4.7 Voltmeter^{♣ 0790050067}

Dumpmaster is fitted with a voltmeter on the control panel, which is used to indicate the level of charge in the batteries. The batteries should be recharged anytime the voltmeter reads less than 24 Volts, as set out in §2.4.

- Because the voltage will fluctuate when the machine is operated, the charge level should be checked while the machine is at rest.
- A Operating a machine with a flat battery may trip the circuit breaker, as set out in §3.4.5. This helps protect the motor from excessive current draw.
- 3.4.8 Solar panel Complete Kit 0090040077
- Panel 0250050530
- Secontroller 0250050462

A If you do not operate a machine with a solar panel, please disregard this section.

Dumpmaster can be fitted with a solar panel kit for use in off-grid locations. The 80W monocrystalline solar panel (dimensions 930x673x35mm) is mounted on an adjustable steel bracket at the top of the mast, and charges the battery via a 12V/24V digital regulator.

As per §1.5, in ideal conditions the solar panel provides enough power to dump about 3,000kg of material each day, which is equivalent to about 30 full 240-litre wheelie bins. There are many factors affecting this figure, including the season, the amount of sunlight available, cloud cover, panel alignment and cleanliness, and the condition of the batteries.

To deliver maximum power the solar panel must be correctly aligned, clean, and exposed to direct sunlight throughout the day.

3.4.8.1 Solar panel alignment

The solar panel is mounted on an adjustable steel bracket with one axis of movement. To deliver maximum power, the panel should be aligned to cast the largest-possible shadow when the sun is at its highest point in the sky. However, because the bracket has only one axis of movement, the orientation of the machine itself affects the optimum panel alignment.

Use the following guidelines to align the solar panel:

- 1. Ideally, orient the machine so that adjustment arc of the panel mounting bracket runs from North to South.
- 2. If the adjustment arc cannot be oriented North-South, the panel should be angled at 0° degrees (vertical). While this is suitable close to the equator, it will progressively reduce the power output at latitudes beyond ±20° degrees.
- 3. With the machine in its long-term location, **tilt the panel towards the equator** by the same number of degrees as the machine's geographic latitude.
- 4. If required, a further 5-10% increase in output can be achieved by tuning the panel alignment for the Summer and Winter months:
 - a. At the beginning of Spring, reduce the angle of the panel so it is equal to the machine's geographic latitude **less 15° degrees**.
 - b. At the beginning of Autumn (Fall), increase the angle of the panel so it is equal to the machine's geographic latitude **plus 15° degrees**.
- The panel angles referred to above are measured in degrees of arc from vertical.
- Without correct adjustment the solar panel may deliver as little as 20% of the theoretical maximum output. Correctly adjusting the panel when the machine is installed can increase this figure to ~70%, and adjustment twice a year can increase output to ~75% of the theoretical maximum.

3.4.8.2 Solar panel cleaning

The solar panel should be cleaned every six months, using a microfiber cloth or damp rag.

Use appropriate height-safety equipment when servicing or cleaning the solar panel.





3.5 Electrical Systems (3-phase mains)

A If you do not operate a 3-phase mains machine, please disregard this section.

Dumpmasters with a 3-phase mains powerpack are generally the same as other models, but use a 3-phase 2-pole electric motor to drive the hydraulic pump. A transformer provides 24VDC current to the control systems. In some regions a VSD is also fitted to provide suitable current to the motor.

The motor only runs when the RAISE button is pressed; the cradle is lowered by gravity alone.

3.5.1 International conformance

The exact specifications of 3-phase machines differ depending on the standard voltage and frequency of 3-phase mains power in the intended country of use.

In regions where 3-phase/~400VAC/50Hz power is standard (primarily in Europe, Australasia, and Asia) the motor is driven directly by the mains current in 'delta configuration'. In locations where different voltages and frequencies are common (primarily in North and South America) an electronic Variable Speed Drive (VSD) is fitted, which modulates the local mains supply and outputs 3-phase/400VAC/50Hz current to the motor in 'star configuration'.

A list of 3-phase power standards in different countries and territories may be viewed here: https://www.worldstandards.eu/three-phase-electric-power/.

A Connecting Dumpmaster to a power supply for which it is not designed may damage the motor and other components. Consult an electrician if you are unsure.

3.5.2 Appliance inlet* 0790050174

Dumpmaster is fitted with an IP66-rated appliance inlet, allowing it to be operated with a regular 3-phase extension lead. Depending on the phase polarity of the AC power supply, the power plug may need to be rewired to make the motor turn in the right direction.

3-phase electric motors turn in different directions depending on the polarity of the input current, so a mismatch will make the motor run backwards. This does not damage the motor, but prevents the hydraulic system from lifting the cradle. An electrician can correct this problem by switching any two of the 'phase wires' in the power plug.

3.5.3 Isolator switch \$\pi 0210050002

Dumpmaster is fitted with an isolator switch on the forward side of the powerpack cover. This isolates the electrical systems from the power supply. It should be turned OFF if the machine is to be placed in storage, or if the powerpack cover needs to be removed.

A The isolator switch must be turned OFF before the powerpack cover is removed.

3.5.4 Transformer NZ/AU/UK/EU 0250050123

Dumpmaster is fitted with a transformer to supply 24VDC current to the control systems. The input voltage and frequency are specified to suit standard 3-phase mains power in the intended country of use.

3.6 Electrical Systems (1-phase mains)

A If you do not operate a 1-phase mains machine, please disregard this section.

Dumpmasters with a 1-phase mains powerpack are generally the same as other models, but use a Variable Speed Drive (VSD) to drive a 3-phase 2-pole electric motor, which drives the hydraulic pump. A transformer provides 24VDC current to the control systems.

The motor only runs when the RAISE button is pressed; the cradle is lowered by gravity alone.

3.6.1 International conformance

The exact specifications of 1-phase machines differ depending on the standard voltage and frequency of 1-phase mains power in the intended country of use. Both the transformer (§3.6.4) and Variable Speed Drive (§3.6.5) must be specified to suit local norms.

- A list of 1-phase power standards in different countries and territories may be viewed here: https://www.worldstandards.eu/electricity/plug-voltage-by-country/.
- A Connecting Dumpmaster to a power supply for which it is not designed may damage the motor and other components. Consult an electrician if you are unsure.

3.6.2 Appliance inlet NZ/AU 0790050272

Dumpmaster is fitted with an IP66-rated appliance inlet, allowing it to be operated with a regular 1-phase extension lead.

3.6.3 Isolator switch ** 0210050002

Dumpmaster is fitted with an isolator switch on the forward side of the powerpack cover. This isolates the electrical systems from the power supply and should be turned OFF if the machine is to be placed in storage, or if the powerpack cover needs to be removed.

A The isolator switch must be turned OFF before the powerpack cover is removed.

3.6.4 Transformer NZ/AU 0250050122

Dumpmaster is fitted with a transformer which outputs 24VDC current to the control systems. The input voltage and frequency are specified to suit standard 1-phase mains power in the intended country of use.

3.6.5 Variable Speed Drive

Dumpmaster is fitted with an electronic Variable Speed Drive (VSD), which outputs 3-phase/400VAC/50Hz current to the electric motor in 'star configuration'. The input voltage and frequency are specified to suit 1-phase mains power in the intended country of use.

The VSD has many parameters that can be set to suit specific applications. They can be modified or calibrated by a PC that has the appropriate program and cable drivers loaded.

- A Machines with a Variable Speed Drive can be fitted with a joystick, offering progressive control over the lifting speed as per §2.3.3.
- A Residual voltages may be retained in the VSD after it has been disconnected from the power supply. Use extreme caution when servicing all electrical components.



3.7 Hydraulic Systems

3.7.1 Hydraulic control valves

The hydraulic system has four primary control valves:

3.7.1.1 Check valve

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

3.7.1.2 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 bin, or from operating the machine when the cradle is already at the top of the cycle.

3.7.1.3 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 cradle.

3.7.1.4 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 cradle (regardless of the weight of the bin).

3.7.2 Hydraulic fluid

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

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

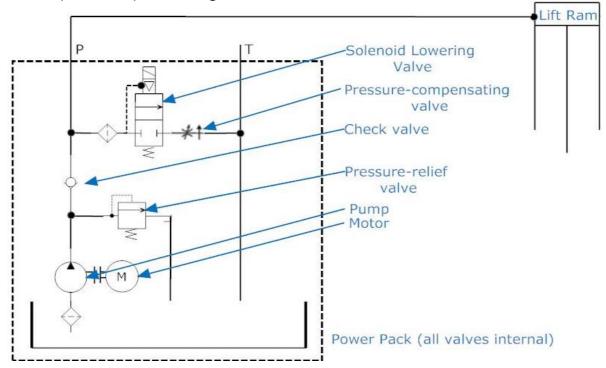
- Mineral Oil Based Hydraulic Fluids HL (DIN 51524 part 1)
- Mineral Oil Based Hydraulic Fluids HL P (DIN 51524 part 2)
- Ensure the cradle is completely lowered before replacing the hydraulic fluid.
- The hydraulic reservoir has markings showing the recommended fill level. Do not fill beyond this level unless specifically instructed by the manufacturer.
- 3.7.3 Hydraulic powerpack 24VDC 1.0cc 0940090001 415VAC 1.2cc 0940090007
 The hydraulic powerpack is supplied as a complete unit. The motor, pump, oil tank, and all control valves are mounted into the centre manifold.

3.7.4 Hydraulic ram DM1500/DM1800 0330090003

The hydraulic ram is a single-action displacement type, with a 1-inch chrome bar and single rubber seal ** 0330090000. Two hydraulic lines run from the powerpack to the ram, and two ram rollers ** 0140120002 transfer the motion of the ram into the lifting chains.

The hydraulic ram is very robust and reliable, but easy to maintain should the need arise.

3.7.5 Hydraulic system diagram



3.7.6 Hydraulic system maintenance

After every 12 months of operation the hydraulic fluid should be drained and replaced, and the intake suction-filter and lowering valve cleaned, as per §3.9.

3.8 Safety Systems

3.8.1 Side-hinge safety door (standard)

Dumpmaster is fitted as standard with a single side-hinge safety door, consisting of a steel tube frame with 25x25x2mm wire mesh guarding. This door is very simple and robust, but will benefit from occasional servicing as follows:

- 1. Lightly lubricate the door pivot points with silicone spray.
- 2. Check that the screws holding the interlock actuators to the door frames are secure.

3.8.2 Swing-up safety door (optional)

Dumpmaster can be optionally specified with a swing-up safety door, consisting of a steel tube frame with wire mesh or sheet-metal guarding, supported by two gas struts. This type of door takes up a minimum of space, but has several moving parts and will benefit from occasional servicing as follows:

- 1. Lubricate the arm pivot points with silicone spray (both ends of all four arms).
- 2. Check that the screws holding the interlock actuators to the door frames are secure.
- 3. Check the weight of the door is correctly balanced by the gas struts, so the door can be opened and closed with a minimum of effort. If the door is difficult to open, or does not remain open, one or both gas struts will likely need to be replaced.

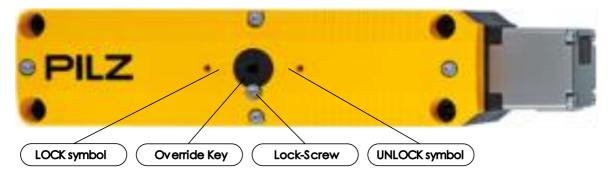


3.8.3 Safety interlock State Interlock 0250050162 Actuator 0250050038

▲ Dumpmasters that were manufactured prior to April 2023 (serial \$7329 and below) are fitted with Idec interlocks, which can only be disabled or enabled using an Idec Override Key. For more information on the Idec interlocks, see Dumpmaster User Manual v119.

Dumpmaster is fitted as standard with a single Pilz 6L000022 solenoid-operated safety interlock. This is a 'power-to-unlock' type, with two internal contacts to authenticate that the door is closed and locked.

Machines with a swing-up door are fitted with two interlocks, mounted close to the ground on either side of the frame; both must be unlocked before the door can be opened.



3.8.3.1 Interlock manual override

- A This work should only be carried out by competent and authorised personnel.
- A This procedure does not apply to machines with a CAT3 safety-monitoring system.

 Contact your Simpro agent for advice on bypassing the interlock on a CAT3 machine.

All routine Dumpmaster cleaning and maintenance should be carried out with the cradle in the lowered position, allowing the safety door to be opened without risk. To open the safety door with the cradle raised, the interlock must be manually overridden as set out below;-

- 1. Move the cradle to the lowered position and open the safety door.
- 2. Loosen the Lock-Screw on interlock the using a small flathead screwdriver.
- 3. Use a 4mm Allen key to turn the interlock Override Key to the UNLOCK position, making sure it rotates a full 180 degrees.
- The safety door can now be opened even while the cradle is raised. The interlock will still function as a cutout switch, preventing the cradle from moving while the door is open.
- \triangle Never open the safety door with the Override Key partly turned (less than 180°).
- Never apply excessive force to the Override Key or interlock components.
- A Never leave the Override Key set to UNLOCK during regular operation.
 - 4. Close the safety door and move the cradle to the required position.
 - 5. Open the safety door and carry out cleaning, repairs or service work as required.
 - 6. Once the work is complete, turn the interlock Override Key back to the LOCK position and tighten the Lock-Screw.
 - 7. Carry out a complete tipping cycle to test the operation of the machine and safety functions before returning it to service.

3.8.4 Safety controller

If you do not operate a Dumpmaster with a CAT3/CAT4 safety-monitoring system, please disregard this section.
 Dumpmasters with a CAT3/CAT4 safety-monitoring system

that were manufactured prior to April 2023 (serial S7329 and below) are fitted with a Rockwell 440C-CR30 Safety Controller. For more information about the Rockwell controller see Dumpmaster User Manual v119.

Dumpmaster models with CAT3/CAT4 safety architecture are fitted with a Pilz Safety Controller to monitor the operation of the safety functions in accordance with ISO13849 and AS/NZS4024. The controller continuously monitors the status of the Emergency Stop contacts, door interlocks, cradle limit sensors, and other safety devices that may be fitted.

The controller must be in READY MODE before the machine can be operated. It goes into SAFE MODE immediately whenever an unsafe condition is detected, such as;-

- 1. The Emergency Stop button is pressed;
- 2. The safety door is unlocked and/or opened;
- 3. An interlock fault is detected;
- 4. A sensor fault is detected.

When the controller is in SAFE MODE, the RESET button on the control panel glows blue. The controller must be 'reset' to

READY MODE before the machine can be operated, as set out in §2.3.4.1.

Depending on the operating requirements, the safety controller may be either a **PNOZ mm0p** **0960050048 (non-expandable model) or a **PNOZ m B0****0960050032 (expandable model). The model code is printed on the front panel of the controller, as seen in the image above.

3.8.4.1 Controller troubleshooting

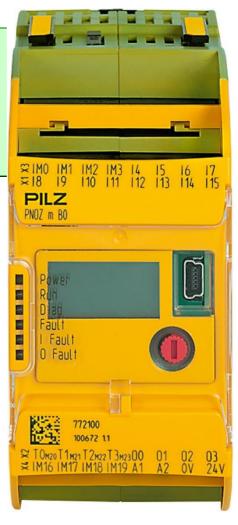
A The following documentation is provided to assist authorised technical personnel to find and correct faults which are preventing the safety controller from being reset.

A This work should only be carried out by competent and authorised personnel, in strict accordance with electrical and machinery safety practises.

Dumpmasters with CAT3/CAT4 safety architecture are supplied with a Technical Specification document, which contains a circuit diagram and comprehensive report on the safety controller functions. This document, together with the LCD screen on the controller, can be used to trace faults which are preventing the safety controller from being reset.

Typically, the following inputs must be HI before the controller can be reset:

- TWO Emergency Stop channels (IM0, IM1)
- ONE or TWO Door Locked channels (normally IM2 and IM3)





- ONE or TWO Door Closed channels (see Assignment List in report to identify terminals)
- ONE or TWO External Emergency Stop channels, where provided (see Assignment List in report to identify terminals)

The other inputs are not safety-related and are not necessary to be HI for a system reset.

If the controller will not reset, it is necessary to open the cabinet then turn the isolator switch on to power up the control circuits.

⚠ The control circuit is 24VDC but there are 400VAC connections inside the cabinet.

A Identify the high-voltage connections before proceeding and take precautions to keep well clear of them while the cabinet is open.

3.8.4.2 Controller status LEDs

The five LEDs on the front-left of the safety controller provide basic status information, as shown below.

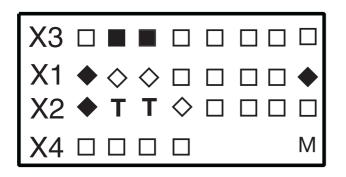
Base			Error		
RUN	DIAG	FAULT	IFAULT	OFAULT	
•	•				The existing user program has been deleted.
•		*			External error on the base unit, leading to a safe condition, e.g. chip card not inserted
•				*	External error on the base unit outputs, e.g. short across the contacts, leading to a safe condition.
•	€	€			Internal error on the base unit
•	€		•		Internal error on the base unit (inputs)
•	•			€	Internal error on the base unit (outputs)
	*				Base unit in a STOP condition
*			€		External error on the base unit inputs, which does not lead to a safe condition, e.g. partially operated
*				€	External error on the base unit outputs, which does not lead to a safe condition, e.g. feedback input defective

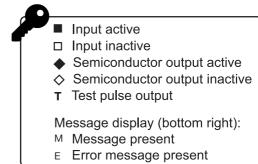




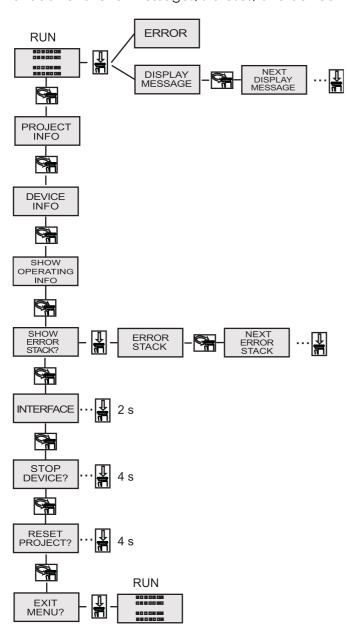
3.8.4.3 Controller LCD display

The LC display on the front of the safety controller can display the status of all inputs and outputs using four rows of symbols, as shown below.





The red button on the front of the controller can be pressed and/or turned to access a range of additional error messages, statuses, and device information, as shown below.





To access error messages on the LCD display that do not lead to a SAFE condition, press the red button once. Current error messages will display immediately, and can be interpreted using the table below.

Error message	Error description
FAULTY PROJECT	Chip card contains a project which is faulty or incompatible.
CHIP CARD ?	Chip card is not inserted, blank or unreadable
FAULTY TEST PULSE	Error caused by test pulse
PARTIALLY OPERATED	Function element was or is partially operated
FEED BACK LOOP	Exernal error at the feedback loop inputs
OPERATING MODE SWITCH SELECTOR	Error on the operating mode selector switch function element
FAULTY OUTPUT	External error on the output
OUTPUT WITH ADVANCED FAULT DETECTION	External error on the output with advanced fault
detection LOAD SUPPLY	Error in the supply voltage for the semiconductor
outputs FAULTY DEVICE	Internal error on the base unit
SUPPLY LOW	Supply voltage is below the tolerance level
SUPPLY HIGH	Supply voltage exceeds the tolerance level
RELAY DEVICE?	Error on the expansion module with relay outputs
RELAY DEVICE OR TERMINATION PLUG?	Error on the expansion module with relay outputs or on the connector

Once the cause of the error message has been rectified, the safety controller can be reset by pressing the red button for 3-8 seconds.

3.8.4.4 Controller configuration software

The safety controller can be monitored and configured in place by using a **USB-A Male to USB-Mini Male** cable to connect it to personal computer running the correct version of the PNOZmulti Configurator software.

- The PNOZ mm0p Safety Controller requires the PNOZmulti Configurator v10.14 software, which must be purchased from an authorised Pilz distributor.
- The PNOZ m B0 Safety Controller requires the PNOZmulti Configurator v11.1.0 software, which is available as a free download at the following link: https://www.pilz.com/en-nz/products/small-controllers/software/pnozmulti-tools

Both safety controller models store the configuration program on a removable memory card $^{\$0960050035}$. This allows the program to be easily updated or modified offsite.

A Safety Controller programs should only be modified by competent and authorised personnel, with prior permission from Simpro.

3.9 Preventative Maintenance Inspections

Regular preventative maintenance inspections (PMIs) should be carried out on Dumpmaster. This helps ensure operator safety and extend the service life of the machine.

The PMI schedule is divided into two parts: monthly and annual inspections. The relevant procedures and logs are provided in the following section.

In the United Kingdom, the Lifting Operations and Lifting Equipment Regulations 1998 specifies that Preventative Maintenance Inspections be carried out on all workplace lifting equipment. These are sometimes known as LOLER checks. The following schedules and logs may be used to demonstrate conformance with UK LOLER regulations.

A Operators should immediately stop using the MegaDumper and request an inspection if any abnormal operation, fault, or failure is observed.

3.9.1 Pre-inspection checklist

- Wear suitable Personal Protective Equipment (PPE), including safety boots and protective eyewear.
- 2. Check that 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.
- Always use height safety equipment when servicing elevated areas.

3.9.2 PMI procedures

Cat.	No.	Item	PMI procedure	Monthly	Annually
	1	Operators	Check that all operators are trained and authorised by the PCBU*. Check that the machine is not being used by unauthorised personnel.	✓	<u>~</u>
General	2	Entire machine	Carry out a complete tipping cycle and check for faults or abnormal behaviour.	<u>~</u>	<u>~</u>
	3	Decals and labels	Check that all decals and labels are attached and legible	✓	✓
ems	4	Battery	Visually inspect battery for acid leaks and case damage		✓
Electrical Systems	5	Control switches, contact blocks and wiring	Visually inspect for rodent damage, frayed or melted insulation, etc.		✓
	6	Power cord	Visually inspect for rodent damage, frayed or melted insulation, etc.	<u>~</u>	<u>~</u>



Cat.	No.	Item	PMI procedure	Monthly	Annually
	7	Hydraulic ram Ram seal 0090090006	Check for leaks.		✓
ems	8	Lowering valve Coil 0250090067 Cartridge 0250090055	Remove and clean.		✓
Hydraulic systems	9	Oil intake filter	Remove and clean		✓
Hydr	10	Hydraulic fluid	Check the level of hydraulic fluid and top-up if necessary as per §3.7.2.	✓	
	11	Hydraulic fluid	Drain and replace the hydraulic fluid in accordance with §3.7.2.		<u>~</u>
	12	Lifting chains	Lightly lubricate with silicone spray. Visually inspect for corrosion or wear.		<u>~</u>
	13	Ram rollers \$0140120002	Lightly lubricate with silicone spray.		<u>~</u>
stems	14	Follower rollers \$0090120000	Lightly lubricate with silicone spray.		✓
Mechanical Systems	15	Roller arm(s) \$ Single 0640200005 Double 0640200003	Lightly lubricate with silicone spray.	✓	✓
Mech	16	Masts channels and sliding blocks	Lightly lubricate with silicone spray.	✓	✓
	17	Cradle axle \$ 00000000002	Lightly lubricate with silicone spray.	✓	✓
	18	Castor wheels Braked 0250040076 Unbraked 0250040072	Check the castor wheels roll smoothly and both brakes work correctly.	✓	✓
Safety Systems	19	Safety door	Lightly lubricate the door hinges with silicone spray. Check the machine cannot be operated when the door is open. Check the door cannot be opened when the cradle is above 100mm.	✓	✓
	20	Interlock and actuator	Check the actuator enters the interlock smoothly, without force. Check that the actuator is securely attached with security screws.	and Safety at We	V A A 2015)

^{*} Person Conducting Business or Undertaking (as defined by the Australian Work Health and Safety Act 2011 and the NZ Health and Safety at Work Act 2015)

3.9.3 *PMI log sheets*Use the following log sheets to document each Preventative Maintenance Inspection carried out on the machine.

Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4 15 16 17 18 19 20	Trainier and February	
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		



Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		

Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4) 15 (6) 17 (8) 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4) 15 (6) 17 (8) 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4 15 16 17 18 19 20		
			1) 2 3 4 5 6 7 8 9 10 11 12 13 (4) 15 (6) 17 (8) 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4) 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4) 15 (6) 17 (8) 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 (4) 15 (6) 17 (8) 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		



Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		

4. Assembly, Handling and Storage

4.1 Assembly

Dumpmaster is usually delivered fully assembled, but in some cases guarding panels may be removed to minimise volume for shipping. Assembly instructions can be viewed at the following link: https://support.simpro.world/help/dumpmaster-assembly-guide.

A sealed 'transit plug' may be fitted to the hydraulic fluid tank to prevent oil leaks during shipping. This must be replaced with the supplied 'breather plug' before the machine is operated, or the tank may be damaged.

4.2 Moving

When Dumpmaster is standing upright it may be easily moved on its castor wheels, using the two grab-handles provided. To ensure stability the cradle should be positioned 100mm off the ground when moving.

- A On a hard, flat surface, Dumpmaster can be moved by a force of approximately 70 Newtons at a height of 1.6 metres.
- An accessory is available from Simpro which enables a directional lock on the castor wheels. This can make the machine easier to manoeuvre on sloping ground.
- A Extra care should be taken when moving the machine on sloping ground.

4.3 Lifting

Observe the following procedures when lifting Dumpmaster;-

- 1. Check that the lifting equipment is in good condition and rated to lift at least 500kg.
- 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 remains upright at all times.
- The service weight of Dumpmaster is listed on the rating plate. Before lifting any heavy object, check that it is within the Safe Working Load of the lifting equipment.
- A Never stand or reach beneath any heavy object while it is being lifted.

4.4 Transport

Observe the following procedures when transporting Dumpmaster;-

1. Lower the cradle, apply both brakes and turn the isolator switch OFF.



- 2. Firmly tie the cradle into position against the lower frame cross-member with plastic strapping or cable ties. This will maintain positive tension on the chains during transit, helping prevent them from derailing from the chain-guides inside the mast.
- If the chains do become derailed the cradle may jam when lowering, as per §3.3.7.2. If this occurs, a screwdriver can be used to remove the two cover-plates at the top of the mast, providing access to the chain-guides for checking and re-mounting.
 - 3. Use lifting equipment to lie the machine onto its front (tipping) face on a wooden pallet, and securely strap it into place.
 - 4. Use a 1-tonne forklift to load the pallet onto the deck of the truck.
 - 5. Tie the machine into position using marked tie-down points and strops rated to at least 1000kg, ensuring it is fastened against lateral forces from any direction.
- A Never lie the machine onto its sides or back (safety door) as this may cause hydraulic fluid leaks and/or damage to the guarding.

4.5 Storage

If Dumpmaster 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°C. Before placing the machine into storage, carry out the following procedures:

- 1. Clean the machine thoroughly as per §3.2.
- 2. Carry out two complete tipping cycles, then lower the cradle to the ground.
- 3. Apply a thin layer of silicone lubricant to exposed surfaces of moving parts.
- 4. Charge the batteries (if fitted) and lubricate the electrical contacts.
- 5. Turn the isolator switch OFF.
- 6. Remove the key and store it in a safe place.



5.Safety Assessment

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

Before the machine is used for the first time, a site-specific Hazard and Risk Assessment should be completed as per §5.3.

5.1 Safety features

The safety features of the standard Dumpmaster design are as follows:

- 1. Mesh and sheet-metal panels which prevent access to all moving parts.
- 2. A safety interlock system which disables the machine unless the door is shut, and electrically locks the door as soon as the cradle leaves the ground.
- 3. A tipping action which maintains the weight of the bin within the machine footprint.
- 4. A pressure-compensating lowering valve which automatically regulates the lowering speed regardless of the weight of the bin.
- 5. A control system which either:
 - a. stops the machine unless continuous operator input is received, or;
 - b. has a prominent EMERGENCY STOP button to disable the machine.

5.2 Reasonably foreseeable misuse

Reasonably foreseeable misuse considered in the Dumpmaster design is as follows:

- 1. Attempts to use the machine by untrained operators;
- 2. Attempts to empty bins that the cradle is not specifically designed to hold;
- 3. Attempts to bypass the door interlock or other safety systems;
- 4. Attempts to clear spilt material from inside the guarding without proper procedures;
- 5. Attempts to clean the machine without following proper procedures.

5.3 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 Dumpmaster design. Blank template spaces are provided for additional site-specific hazards.

A 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 set out in §5.3.3.

5.3.1 The ISO 12100 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.

5.3.1.1 Determining the 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, or not surprising	4	Hourly	8	Loss of 2 limbs or eyes/serious illness (permanent)	-	-
10	Likely, or only to be expected	5	Constantly	15	Fatality	-	-
15	Certain, or beyond doubt	-	-	-	-	-	-

5.3.1.2 Evaluating the Risk

Once a Risk Factor has been calculated, the risk can be evaluated using the following table:

Risk Factor	0-1	2-5	6-10	11-50	51-100	101-500	501-1000	1001 +
Evaluation	Negligible	Very Low	Low	Significant	High	Very High	Extreme	Unacceptable

A Risks evaluated as Very High, Extreme or Unacceptable are likely to require additional or uprated safety functions, as per §5.4.4. These must be specified at the time of order.

5.3.2 Identified Hazards

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

Â

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

E	ntangle	emen	or ampu	ıtatio	n of finger	s or li	mbs in	movir	na parts		
	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2	
Operator	Guard	ing pre	events acc	cess to	all moving	g part	s and tr	apping	g hazards.		
Other	LO:	1	FE:	4	DPH:	1	NP:	1	Risk Factor:	4	
persons	As abo	As above.									
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	Dumpi or isolo		is designe	ed so t	that trappir	ng ha	zards ar	re elimi	nated, minim	ized,	
	С	rushin	g by una	uthor	ized rapid	des	cent of	cradle	e		
	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2	
Operator	operate when to door is Signification	The operator is protected from the cradle by the frame and guarding during operation. A door safety interlock ensures that the door can only be opened when the cradle is on the ground, and the cradle cannot be raised unless the door is closed and locked. Significant safety margins ensure that the probability of failure of any steel, hydraulic, or control parts failing is very low.									
Other	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2	
persons	As abo	ove.									
Control measures	instruct the cro	tions, r adle w achine	egarding l hen raisec must be r	keepii I.	•	and c	others av	way fro	ne machine a om the area u epaired		
Comments	A hydr norma		peed-con	trol vo	alve limits th	ne mo	aximum	speed	of descent in		
	Ор	erato	r or other	s beir	ng hit by fo	alling	or flyin	g deb	ris		
	LO:	1	FE:	4	DPH:	0.5	NP:	1	Risk Factor:	2	
Operator						,			d guarding dure e being tippe	_	
	LO:	1	FE:	4	DPH:	0.5	NP:	1	Risk Factor:	2	
Other persons			risk to oth ng tipped.		anding clos	se to	the bin i	if items	such as broke	∍n	
Control measures	keepin	Operators are responsible to obey all instructions and warning signs regarding keeping personnel from the machine while in use. If tipping product such as glass, metal or liquids, suitable PPE should be worn.									
Comments											



			Crushing	a if the	e machi	ne fall	s over					
	LO:	0.5	FE:	2.5	DPH:	1	NP:	1	Risk Factor:	1.25		
Operator		Low risk as Dumpmaster is very stable and the bin centre of gravity remains well within the machine's footprint throughout the tipping cycle.										
Other	LO:	0.5	FE:	2.5	DPH:	1	NP:	1	Risk Factor:	1.25		
persons	As abo	ve.										
Control measures			te on soft ot to emp						greater than 1	:12.		
Comments												
			Electro	cutio	n or elec	ctric st	nock					
Operator	LO:	1	FE:	4	DPH:	15	NP:	1	Risk Factor:	60		
Operator	Some ri	sk is al	ways pres	ent w	rith mains	leads.						
Other	LO:	1	FE:	4	DPH:	15	NP:	1	Risk Factor:	60		
persons	As abo	ve.										
Control measures	Check All lead interval	all lead Is shou s.	ds freque Id be test	ntly ar ed ar	nd repair nd tagged	or repl	ace if d registere	amage ed elec	ctrician at reg	ular		
Comments			ed Dumpi on battery						th AS60204.1. nsulated.			
Contamination from tipping toxic powder and liquid												
	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8		
Operator	could c	cause (what	soever to	the op	erator o	or to ar	s. If the produ ny other perso e fitted.			
Other	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8		
persons	As abo	ve.										
Control measures	well cle	ear of t r shoul	he area. d only be		·				all other perso			
Comments									with PPE shou lld be used.	ıld not		
			skin whe			eme v		cond				
	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8		
Operator			ıst wear a onmenta			when	operati	ng the	MegaDumpe	er in		
Other	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8		
persons	As abo	ve.										
Control measures			must wec		ropriate F	PE wh	en work	ing in e	extreme			
Comments	See §1.	8 for D	umpmas	ter en	vironmen	tal rest	rictions.					

Site-spec	ific haz	ard:				
	LO:		FE:	DPH:	NP:	Risk Factor:
Operator						
	LO:		FE:	DPH:	NP:	Risk Factor:
Other persons						
Control measures						
Comments						
Site-spec		ard:		5511		511.5
	LO:		FE:	DPH:	NP:	Risk Factor:
Operator						
	LO:		FE:	DPH:	NP:	Risk Factor:
Other persons						
Control measures						
Comments						
Site-spec		ard:				
Operator	LO:		FE:	DPH:	NP:	Risk Factor:
	LO:		FE:	DPH:	NP:	Risk Factor:
Other persons						
Control measures						
Comments						
Site-spec		ard:				5.
	LO:		FE:	DPH:	NP:	Risk Factor:
Operator						
Other	LO:		FE:	DPH:	NP:	Risk Factor:
Other persons						
Control measures						
Comments						



5.3.3 Residual Hazards

As with all industrial lifting equipment, some **residual hazards** may be present despite any interlocks, guarding or other safety functions that can be fitted to the machine.

The machinery owner has a leGal responsibility to take **all reasonable precautions** to eliminate, isolate, or minimize these residual hazards. This may include:

- Monitoring and enforcing the training of operators
- Design and implementation of Standard Operating Procedures
- Using rewards and/or disciplinary measures to encourage safe behaviours
- Posting signage, floor marking, or other warnings as appropriate
- Encouraging a culture of safety within the workplace

5.4 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 an equivalent local standard).

ISO 13849-1:2015 may call for additional guarding, interlocks, and other safety features, depending on the particular conditions of use. The following section is provided to assist potential Dumpmaster operators in determining whether any additional safety features are required for their application.

- A 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.
- A 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 derivative 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 their H&S obligations.

5.4.1 The ISO 13849 functional 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 means 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 **PLa** (lowest performance) to **PLe** (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).

5.4.2 Identifying the required safety functions

To identify the safety functions required for a given machine, a site-specific hazard and risk assessment must first be completed as per §5.3. Identified hazards that cannot be avoided or eliminated must be addressed by appropriate safety functions.

5.4.3 Determining the Performance Level required (PLr)

As defined by the ISO 13849-1:2015 safety model, the minimum PLr for any given safety function is derived from three 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 minimum PLr from these parameters.

Severity of potential injury from hazard	Frequency and/or duration of exposure to hazard	Possibility of manually avoiding the hazard	PLr	
	Seldom to quite often	Possible under specific conditions	PL(a)	
Slight injuny (roversible)	and/or short exposure time	Scarcely possible		
Slight injury (reversible)	Fraguent to continuous	Possible under specific	PL(b)	
	Frequent to continuous and/or long exposure time	conditions		
	ana/or long exposure lime	Scarcely possible		
	Soldom to quito often	Possible under specific	PL(c)	
	Seldom to quite often and/or short exposure time	conditions		
Serious injury or death	ana/or short exposure time	Scarcely possible		
(irreversible)	Fraguent to continuous	Possible under specific	PL(d)	
	Frequent to continuous and/or long exposure time	conditions		
	ana/or long exposure lime	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.

Safety function performance may be assessed as part of the regular Hazard and Risk Assessment set out in §5.3. Although this assessment includes all hazards intrinsic to the Dumpmaster design, other safety functions may be required to address site-specific hazards, which can be evaluated using the blank spaces provided.

5.4.4 Achieving the Performance Level required (PLr)

Because all hazards intrinsic to the Dumpmaster design are addressed by safety functions with a baseline performance of PLc, it follows that additional or uprated safety functions are only required in the following cases:

- 1. The risk assessment identifies application-specific hazards which are not addressed by the safety functions built into the standard Dumpmaster design.
- 2. The risk assessment identifies application-specific hazards which are sufficiently serious and/or frequent as to require safety functions with a performance level of PLd or PLe.



3. The operating environment is subject to corporate policies, union contracts, OSH regulations or other external factors which specify that all machinery must have a safety performance level of PLd or PLe.

In any of these cases, information about the hazard and risk assessment, required safety function and performance level should be provided to Simpro before placing an order.

Simpro can then specify and quote additional or uprated safety functions, such as:

- CAT3 Kit** 0960050014 to achieve PLd safety performance
- CAT4 Kit^{\$0960050017} to achieve PLe safety performance
- Additional guarding
- Remote controls
- Training of operators
- Custom signage or floor markings
- The CAT3 Kit is the most common Dumpmaster safety function upgrade. It is typically specified when any of the following conditions apply:
 - Intensive 24/7 operating cycle
 - Transient or low-skilled operators
 - Personnel frequently entering the machine (ie for daily cleaning)
 - Corporate or union policies require machinery to have CAT3/PLd safety functions



6.Technical Data

6.1 Specifications

			Dumpmaster Spe	cifications*		
	1.1	Manufacturer	Simpro	Simpro	Simpro	Simpro
	1.2	Model	DM1800-B	DM1800C-B	DM1800A-B	DM1800D-B
	1.3	Power Source	Battery	Battery	Battery	Battery
ers ers		Role	Bin Lifter	Bin Lifter	Bin Lifter	Bin Lifter
<u>ē</u>	1.4		1800mm			
Parameters		Tipping height		1800mm	1800mm	1800mm
g	1.6	Load capacity	250kg	250kg	250kg	300kg
<u>~</u>		Cradle type	Type-E	Type-C	Type-A	Type-D
Key		Cradle mechanism	Base-lift	Comb-lift	Bar-lift	Trunnion-lift
	1./.3	Cradle standard	EN840	EN840	ANSI Z245.60	DIN9797
	1.7.4	Cradle compatibility	60L/80L/120L/240L	60L/80L/120L/240L	24/32/48/64/96-	200L/300L
	0.1	\\/ - : - : - - -	wheelie bins	/360L wheelie bins	Gal rollout carts	Eurobins
₹	2.1	Weight	~220kg	~270kg	~250kg	~280kg
Weight	2.2	Wheel loading laden, front/rear	140/95kg	160/100kg	150/100kg	160/105kg
Š	2.3	Wheel loading unladen,	80/30kg	95/40kg	90/35kg	100/40kg
		front/rear	-		-	
<u>S</u>	3.1	Tyre type	Resilex	Resilex	Resilex	Resilex
Wheels	3.2	Tyre size front	ø100x35mm	ø100x35mm	ø100x35mm	ø100x35mm
₹		Tyre size rear	ø100x35mm	ø100x35mm	ø100x35mm	ø100x35mm
	3.5	Wheel number, front/rear	2/2 (2 braked)	2/2 (2 braked)	2/2 (2 braked)	2/2 (2 braked)
Dimensions	4.2	Height overall	2860mm	3160mm	2865mm	3060mm
Si	4.3	Height guarding	2200mm	2200mm	2200mm	2200mm
ē	4.19	Length overall	1175mm	1300mm	1291mm	1220mm
ij	4.20	Bin throw distance	180mm [†]	75mm [†]	180mm [‡]	40mm#
	4.21	Width overall	965mm	1094mm	1096mm	1131mm
	5.2	Lifting speed laden/unladen	~0.26/0.32ms	~0.26/0.32ms	~0.26/0.32ms	~0.26/0.32ms
45	5.3	Lowering speed laden/unladen	~0.20/0.16ms	~0.20/0.16ms	~0.20/0.16ms	~0.20/0.16ms
Performance	5.4	Hydraulic flow rate max, lifting/lowering	~4.8/3.0lpm	~4.8/3.0lpm	~4.8/3.0lpm	~4.8/3.0lpm
Ě	5.5	Hydraulic pressure max	~16500kPa	~16500kPa	~16500kPa	~19800kPa
ıfo	5.6	Operating cycle duration	~26s	~26s	~26s	~26s
Pe	5.7	Throughput per hour/charge	~2700/8100kg	~2700/8100kg	~2700/8100kg	~2700/8100kg
	5.8	Operating gradient max	12%	12%	12%	12%
		Brake type	Foot-operated	Foot-operated	Foot-operated	Foot-operated
		Powerpack type	Electro-hydraulic	Electro-hydraulic	Electro-hydraulic	Electro-hydraulic
		Powerpack power source	24V Battery	24V Battery	24V Battery	24V Battery
		Motor type	DC series-wound	DC series-wound	DC series-wound	DC series-wound
		Motor power	0.8kW	0.8kW	0.8kW	0.8kW
		Motor speed	2800rpm	2800rpm	2800rpm	2800rpm
		Motor current draw	70A	70A	70A	70A
		Battery type	VRLA GEL	VRLA GEL	VRLA GEL	VRLA GEL
		Battery voltage/capacity	2x12V/20Ah	2x12V/20Ah	2x12V/20Ah	2x12V/20Ah
쑹		Battery weight	2x6.5kg	2x6.5kg	2x6.5kg	2x6.5kg
bd		Battery charger type	Float charger	Float charger	Float charger	Float charger
Je.		Battery charger power	160W	160W	160W	160W
Powerpac	6.5.3	Battery charger output	27.2VDC 5.89A	27.2VDC 5.89A	27.2VDC 5.89A	27.2VDC 5.89A
<u> </u>	6.5.4	Battery charger input	85-264VAC 50/60Hz 1-ph ≤2A	85-264VAC 50/60Hz 1-ph ≤2A	85-264VAC 50/60Hz 1-ph ≤2A	85-264VAC 50/60Hz 1-ph ≤2A
	6.5.5	Battery charger charge duration	~3 hours	~3 hours	~3 hours	~3 hours
		Hydraulic pump type	Geared group 05	Geared group 05	Geared group 05	Geared group 05
		Hydraulic pump displacement	1.0cc	1.0cc	1.0cc	1.0cc
		Hydraulic ram type	Single-acting	Single-acting	Single-acting	Single-acting
	6.7.2	Hydraulic ram bore	25.4mm	25.4mm	25.4mm	25.4mm
	6.7.3	Hydraulic ram stroke	1045mm	1045mm	1045mm	1045mm
	6.7.4	Hydraulic ram displacement	530cc	530cc	530cc	530cc
ē	8.1	Movement type	Pedestrian	Pedestrian	Pedestrian	Pedestrian
Other	10.7	Sound pressure at operator's ear	<60db(A)	<60db(A)	<60db(A)	<60db(A)
	pacifica	tions are generic and subject to change withou	rt notice + With 240L v	who alia him the Mith 44	Gal trash cart # With 20	00L Eurobin

^{*} All specifications are generic and subject to change without notice

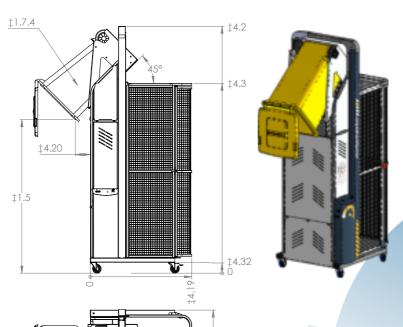


6.1.1 Tipping height specifications

	Dumpmaster Tipping Height Specifications*									
S.	1.5	Tipping height	700mm	1200mm	1500mm	1800mm	2100mm	2400mm	2700mm	3000mm
Parameters	5.6	Operating cycle duration	~20s	~22s	~24s	~26s	~28s	~30s	~32s	~34s
	6.7.3	Hydraulic ram stroke	495mm	725mm	1045mm	1045mm	1345mm	1345mm	1645mm	1645mm
Key	6.7.4	Hydraulic ram displacement	250cc	367cc	530cc	530cc	682cc	682cc	834cc	834cc
S	1.2	Model	DM0700	DM1200	DM1500	DM1800	DM2100	DM2400	DM2700	DM3000
E-Series	1.7.1	Cradle type	Туре-Е	Туре-Е	Туре-Е	Туре-Е	Туре-Е	Type-E	Туре-Е	Туре-Е
E-Se	2.1	Weight	~160kg	~190kg	~210kg	~220kg	~260kg	~280kg	~300kg	~320kg
	4.2	Height overall	1760mm	2260mm	2560mm	2860mm	3160mm	3460mm	3760mm	4060mm
လွ	1.2	Model	DM0700C	DM1200C	DM1500C	DM1800C	DM2100C	DM2400C	DM2700C	DM3000C
erie	1.7.1	Cradle type	Type-C							
C-Series	2.1	Weight	~210kg	~240kg	~260kg	~270kg	~310kg	~330kg	~350kg	~370kg
	4.2	Height overall	2060mm	2560mm	2860mm	3160mm	3460mm	3760mm	4060mm	4360mm
S	1.2	Model	DM0700A	DM1200A	DM1500A	DM1800A	DM2100A	DM2400A	DM2700A	DM3000A
erie	1.7.1	Cradle type	Туре-А	Type-A	Type-A	Type-A	Type-A	Type-A	Type-A	Туре-А
A-Series	2.1	Weight	~190kg	~220kg	~240kg	~250kg	~290kg	~310kg	~330kg	~350kg
~	4.2	Height overall	1765mm	2265mm	2565mm	2865mm	3165mm	3465mm	3765mm	4065mm
S	1.2	Model	DM0700D	DM1200D	DM1500D	DM1800D	DM2100D	DM2400D	DM2700D	DM3000D
D-Series	1.7.1	Cradle type	Type-D							
-Se	2.1	Weight	~220kg	~250kg	~270kg	~280kg	~320kg	~340kg	~360kg	~380kg
	4.2	Height overall	1960mm	2460mm	2760mm	3060mm	3360mm	3660mm	3960mm	4260mm

6.1.2 Powerpack specifications

	Dumpmaster Powerpack Specifications*									
	1.2	Model	DMXXXX-B	DMXXXX-3	DMXXXX-1	DMXXXX-3U	DMXXXX-1U	DMXXXX-3C		
S	6.1.1	Powerpack type	Electro- hydraulic	Electro- hydraulic	Electro- hydraulic	Electro- hydraulic	Electro- hydraulic	Electro- hydraulic		
Parameters	6.1.2	Powerpack power source	24V Battery	400VAC 50Hz 3-phase Mains	240VAC 50Hz 1-phase Mains	480VAC 60Hz 3-phase Mains	120VAC 60Hz 1-phase Mains	600VAC 60Hz 3-phase Mains		
Parai	6.2.1	Motor type	DC series- wound	AC 3-phase 2-pole	AC 3-phase 2-pole + VSD	AC 3-phase 2-pole	AC 3-phase 2-pole + VSD	AC 3-phase 2-pole		
Key	6.2.2	Motor power	0.8kW	1.1kW	1.1kW	1.1kW	1.1kW	1.1kW		
\checkmark	6.2.4	Motor speed	2800rpm	2800rpm	2800rpm	2800rpm	2800rpm	2800rpm		
	6.2.5	Motor current draw	70A	2.8A	6A	2.3A	12A	1.8A		



6.2 Layout diagram

Generic drawing for reference purposes only

7. Accessories

A range of Dumpmaster accessories and complementary products are available from Simpro, a selection of which are listed below.

Cat	Partcode	Model Code	Description				
	\$ 0480190014	DM-BINHOOK	Dumpmaster Bin-Hook Kit, with adjustable latches to hold machine in place				
	\$ 1000000003	DM-BOLTDN	Dumpmaster Boltdown Kit, with four Galvanised steel lugs				
	\$ 0400020111	DM-CATBRUTE	Dumpmaster BRUTE® Adaptor Kit				
	\$ 0480190067	DM-CATDRUM	Dumpmaster 205L Drum Adaptor Kit				
	\$ 1000000001	DM-CHU200	Dumpmaster Chute, 200mm throw				
	\$ 0400020036	DM-CHU200C	Dumpmaster Cradle Chute, 200mm throw, high sides				
	\$ 0480190012	DM-CHU300	Dumpmaster Chute, 300mm throw				
Sé	\$ 0480020000	DM-CHU300FG	Dumpmaster Glass Chute, 300mm throw, high sides with viewport				
sorie	\$ 0480190020	DM-CHU530	Dumpmaster Chute, 530mm throw, high sides				
ces	\$ 0480190011	DM-DOORLH	Dumpmaster Left-Hung Door Kit				
AC	\$ 0480190009	DM-FOOTGUARD	Dumpmaster foot-guard panel (two per machine)				
ster	\$ 0480190070	DM-IRONMAN	Dumpmaster Ironman Kit, with heavy-duty guarding, fork pockets and lugs				
ma	\$ 0480190003	DM-OFFROAD	Dumpmaster Offroad Kit, with four 200mm hard-rubber wheels				
Dumpmaster Accessories	\$ 0480190008	DM-OPGUARD	Dumpmaster Operator Guard, with steel frame and curved PET-G panel				
	\$ 0090040077	DM-SOLAR	Dumpmaster Solar Power Kit, with 80W/24V panel and adjustable mounting				
	\$ 0480190002	KIT-AUTOCYC	Autocycle Kit for Simpro bin lifters with PLC, AUTO/MAN switch & E-Stop				
	\$ 0480050044	KIT-CPREMOTE	Remote Control Panel Upgrade for Simpro lifters				
	\$ 0480190049	KIT-FORK	Fork Pocket Kit for Simpro bin lifters, with crane lugs				
	\$ 0510230060	DM-A-CRADLE	DM Type-A Cradle Pressing, bolt-on, 3.0mm PGI				
	\$ 0510230061	DM-A-HOOP	DM Type-A Cradle Hoop Retainer, mild steel				
	\$ 0510230062	DM-A-PACKERS	DM Type-A Cradle Packers, pair, mild steel				
S	\$ 0130181201	MGB120-BB	Simpro 120L Blue Wheelie Bin, HDPE, with 2x 200mm outset wheels				
Bins	\$ 0130181200	MGB120-GG	Simpro 120L Green Wheelie Bin, HDPE, with 2x 200mm outset wheels				
20L Wheelie	\$ 0130181207	MGB120-KK	Simpro 120L Black Wheelie Bin, HDPE, with 2x 200mm outset wheels				
/he	\$ 0130180241	MGB120-LL	Simpro 120L Lime Wheelie Bin, HDPE, with 2x 200mm outset wheels				
) 	\$ 0130181204	MGB120-RR	Simpro 120L Red Wheelie Bin, HDPE, with 2x 200mm outset wheels				
120	\$ 0130180233	MGB120-WW	Simpro 120L White Wheelie Bin, HDPE, with 2x 200mm outset wheels				
	\$ 0130181202	MGB120-YY	Simpro 120L Yellow Wheelie Bin, HDPE, with 2x 200mm outset wheels				
S	\$ 0130182401	MGB240-BB	Simpro 240L Blue Wheelie Bin, HDPE, with 2x 200mm outset wheels				
Bins	\$ 0130182400	MGB240-GG	Simpro 240L Green Wheelie Bin, HDPE, with 2x 200mm outset wheels				
elie	\$ 0130182420	MGB240-KK	Simpro 240L Black Wheelie Bin, HDPE, with 2x 200mm outset wheels				
240L Whe	\$0130180294	MGB240-LL	Simpro 240L Lime Wheelie Bin, HDPE, with 2x 200mm outset wheels				
0L V	\$ 0130182404	MGB240-RR	Simpro 240L Red Wheelie Bin, HDPE, with 2x 200mm outset wheels				
24	\$ 0130180287	MGB240-WW	Simpro 240L White Wheelie Bin, HDPE, with 2x 200mm outset wheels				
	\$ 0130182402	MGB240-YY	Simpro 240L Yellow Wheelie Bin, HDPE, with 2x 200mm outset wheels				
SL	\$0130183601	MGB360-BB	Simpro 360L Blue Wheelie Bin, HDPE, with 2x 200mm inset wheels				
e Bins	\$ 0130183600	MGB360-GG	Simpro 360L Green Wheelie Bin, HDPE, with 2x 200mm inset wheels				
elie	\$ 0130180362	MGB360-KK	Simpro 360L Black Wheelie Bin, HDPE, with 2x 200mm inset wheels				
360L Wheelie	\$ 0130180354	MGB360-LL	Simpro 360L Lime Wheelie Bin, HDPE, with 2x 200mm inset wheels				
10°	\$ 0130180316	MGB360-RR	Simpro 360L Red Wheelie Bin, HDPE, with 2x 200mm inset wheels				
36	\$ 0130180346	MGB360-WW	Simpro 360L White Wheelie Bin, HDPE, with 2x 200mm inset wheels				
	\$ 0130183602	MGB360-YY	Simpro 360L Yellow Wheelie Bin, HDPE, with 2x 200mm inset wheels				



8.Spare Parts

The following table includes only the most common Dumpmaster spare parts as at the time of publication. Additional parts, accessories and prices may be viewed at the following web address: simpro.world/dumpmaster-spare-parts

Cat.	Ref.	Partcode	Description	Qty*	BSK†
	7		Key-Switch, 2-position, stay-put, with 2 x N/O contact blocks	1	V
	9		Up/Down Switch, with 2x N/O contact blocks, coupler and boot	1	~
_	9		Contact Block, N/O (for key-switch and up/down switch)	4	
Switchgear	11		Isolator Switch, configurable, 16A/20A	1	
l di	-		Microswitch, short arm and roller (upper/lower limit switch)	2	
\ightarrow{\display}{2}	-		PLC, 12-24VDC, with 8x inputs and 4x outputs [autocycle only]	1	
Š	8		E-Stop, Ø40mm, metal body, twist to release [autocycle only]	1	
	8		Pushbutton, metal, blue illuminated type [battery autocycle only]	1	~
	8		Selector switch, 2-position, metal, illuminated [3-phase autocycle only]	1	~
, 🗀	-		Appliance Inlet, 1-ph 3-pin 10A 56Al310	1	
affery Systems	13		Battery Charger, 160W/24V, universal	1	
Battery Systems	10		Battery, 12V/20Ah, GEL	2	
te!	8		Voltmeter, 12/24VDC, battery monitor with digital readout	1	~
S	11		Thermal Overload Relay, 1.5A, auto-resetting	1	<u></u>
<u> </u>	11		Circuit Breaker, 75A, auto-resetting	1	
} <u>¥</u>	12		Motor Solenoid, 24V/200A, round silver	1	~
m	14		Motor, 24VDC 800W	1	
	16		Powerpack, 24VDC, 1.0cc pump, 4L tank, no relay	1	
			Appliance Inlet, 3-ph 4-pin 10A 56AI410	1	
Systems	13		Power Supply, 400VAC/24VDC, 120W/5A	1	
ste	11		Thermal Overload Relay, 2.6-3.7A	1	
S	12		Contactor, 24VDC coil, EBSIC-0016KZ Mini	1	
3-Phase	1.4			1	
) Ju	14		Motor, 3-ph 2-pole 1.1kW 400V 71-frame	1	
ج- آ-	16 16		Powerpack, 3-ph 1.1KW, 0.75cc pump [DM0700-3/DM1200-3/DM1500-3] Powerpack, 3-ph 1.1kW, 1.2cc pump [DM1800-3 and above]	1	
	-		Hydraulic Pump, 0.75cc, Group 05 [DM0700-3/DM1200-3/DM1500-3]	1	
	-		Hydraulic Pump, 1.0cc, Group 05 [DMXXXX-B]	1	
ms	-		Hydraulic Pump, 1.2cc, Group 05 [DM1800-3 and above]	1	
ter	15		Lowering Valve Coil, 24VDC	1	
Hydraulic Systems	15 15				<u> </u>
<u>:</u>	4		Flow Control Valve, 1/4" BSP, 1-way with adjusting knob on side Ram, 1 in x 495mm stroke, no rollers [DM0700]	[1]	
g	4		Ram, 1 in x 725mm stroke, no rollers [DM1200]	1	
χd	4		Ram, 1 in x 1045mm stroke, no rollers [DM1500/DM1800]	1	
Í	4		Ram, 1 in x 1345mm stroke, no rollers [DM2100/DM2400/DM2700]	1	
	5		Ram Seal, 1 in x 11/4 in (PU + NBR O-ring)	1	
	6		Ram Roller, standard, nylon	2	
	1		Top Roller, complete, with 2x 6301 bearings	1	<u>✓</u>
	2		Top Roller Axle, Ø12mm, stainless steel with knurled end	1	7
	3		Chain Guide, moulded, for top frame	1	
	17		Castor, 100mm, ZP swivel unbraked, TPR wheel	2	
	18		Castor, 100mm, ZP swivel braked, TPR wheel, Total brake	2	
US	25		Cradle, DM Type-E, for 80L-240L wheelie bins, 3.0mm PGI [E-series]	1	Y
ten	25		Cradle, DM Type-C, for 80L-360L wheelie bins, with gravity latch [C-series]	1	
Sys	25		Cradle, DM Type-C, for 801-3801 wheele birts, with gravity larch [C-series] Cradle, DM Type-A, for 24-96 Gal trash carts, mild steel powdercoated [A-series]	1	
ō	25			1	
nic	_		Cradle, DM Type-D, for 200L/300L Eurobins, mild steel Galvanised [D-series]	1	
Mechanical Systems	26		Single Roller Arm, steel, zinc-plated [DM2100 and below]	1	
	26		Double Roller Arm, steel, zinc-plated [DM2400 and above]	1	
Σ	27		Follower Roller, Ø16-50mm x 35mm long	_	Y Z
	28		Steel Bush, Ø12-16mm x 36mm long, for follower roller	1	
	29		Sliding Plate, steel, zinc-plated, without mast rollers	2	
	30		Mast Roller, moulded and machined	2	
	31		Bin Catch, for Type-E cradle, to suit 80L-240L wheelie bins, 3.0mm PGI [E-series]	2	
	32		Roller Arm Axle, drilled and zinc-plated	1	
	33	\$ 0000000002	Cradle Axle, drilled and zinc-plated	1	

Cat.	Ref.	Partcode	Description	Qty*	BSK†
	19	\$ 0140020088	U-bar, DM standard, complete [E-series]	1	
	19	\$ 0140020282	U-bar, DM wide, complete [A/C/D-series]	1	
	20	\$ 0760040041	Side Guard Panels, handed pair, 25x25 mesh, with bungs	1	
SU	21	\$ 0140020270	Safety Door, DM standard right-hung, 25x25 mesh, complete with bungs [E-series]	1	
Safety Systems	21	\$ 0140020287	Safety Door, DM wide right-hung, 25x25 mesh, with bungs [A/C/D-series]	1	
Sys	-	\$ 0150040002	Handle, black aluminium, 160mm hole centres	1	
<u></u>	22	\$ 0140040002	Door Magnet, round, 25mm x 6mm	1	~
afe	23	\$ 0250050038	Pilz Lock Actuator, flat type, rubber mounted	1	✓
Š	22	\$ 0250050162	Pilz Solenoid Door Lock, 24VAC/DC, with 2x N/C contacts	1	
	22	\$ 0960050046	Pilz Connector Cable, 2.5m long, M12 5-pin female to 6-way Molex	1	
	-	\$ 0960050048	Pilz Safety Controller, PNOZ mm0p 24VDC, non-expandable [CAT3 only]	[1]	
	-	\$ 0960050032		[1]	
	-	\$ 0140170012	Decal, DM Operation Guide, Standard	1	
	-	\$ 0140170033	Decal, DM Operation Guide, Autocycle [autocycle only]	[1]	
	-	\$ 0140170006	Decal, DM Control Panel, Battery [DMXXXX-B series]	1	
SC	-	\$ 0140170008	Decal, DM Control Panel, Mains [DMXXXX-3 series]	1	
30	-	\$ 0140170027	Decal, DM Control Panel, Mains Autocycle [DMXXXX-3 autocycle only]	[1]	
gue	-	\$ 0140170011	Decal, DM Ram Cover - Vertical stripes with Dumpmaster text	1	
Miscellaneous	-	\$ 0140170015	Decal, DM Ram Cover - Yellow stripes for lower ram cover	1	
lisc	-	\$ 0140170004	Decal, DM Roundel, left-handed - Yellow circle for L/H powerpack cover	1	
>	-	\$ 0140170028	Decal, Lockout Switch	1	
	-	\$0090170074	Decal, 24V Battery Charger Specifications [DMXXXX-B series]	1	
	-	\$0090170085	Decal, Wheel Location Guide - Yellow sticker for wheel catches	1	
	-	\$ 0970000001	Dumpmaster User Manual	1	

^{*} Quantity per machine

† Basic Spares Kit

8.1 Superseded parts

The following parts are superseded, but are still available for maintaining older Dumpmasters.

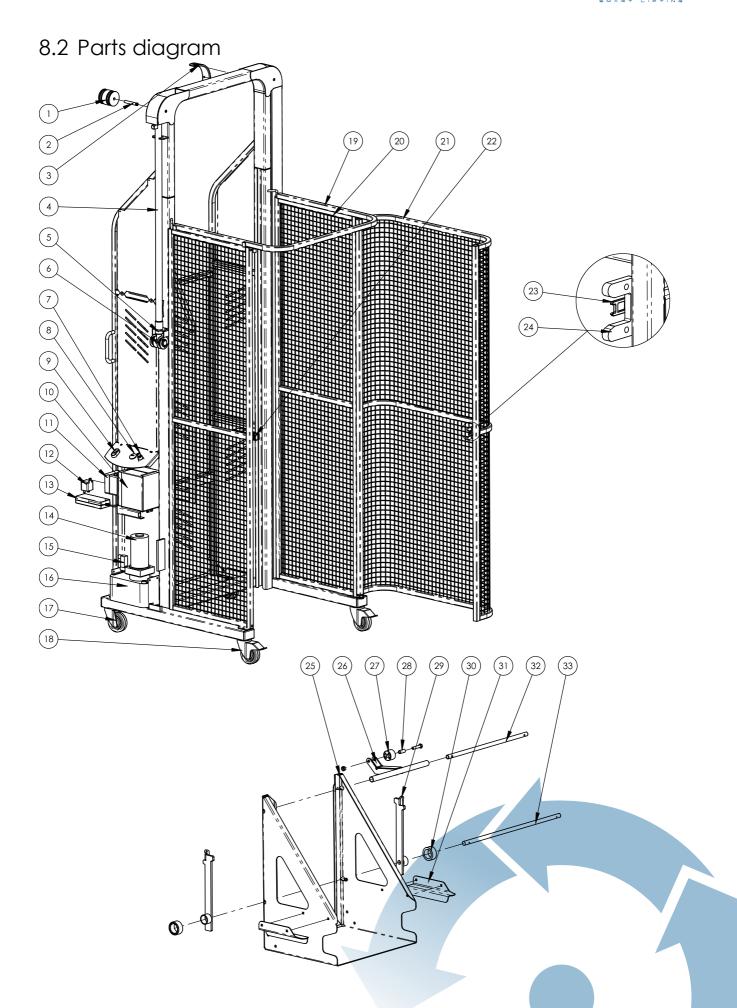
Ref	Partcode	Description	Qty*	Serials	Discontinued
-	\$ 0790050107	Fuse, 120/100A, Maxi Blade	1	< S2455	2015-04-30
-	\$ 0790050101	Fuse, 60A, Maxi Blade	1	S2455-S5784	2019-06-30
8	\$ 0250050049	Voltmeter, 12VDC, battery monitor with red/green LED	1	< S2455	2015-04-30
8	\$ 0250050050	Voltmeter, 24VDC, battery monitor with red/green LED	1	< \$2900	2017-05-31
10	\$ 0250050562	Battery, 12V/55Ah, GEL	1	< S2455	2015-04-30
12	\$ 0880050017	Motor Solenoid, 12V/200A, Trombetta	1	< \$2455	2015-04-30
13	\$ 0410050000	Battery Charger, 12V/7.2A, PB-120N-13C	1	< S2400	2014-12-31
13	\$ 0410050039	Battery Charger, 12V/10A, GC160A12-AD1	1	S2400-S2454	2015-04-30
14	\$ 0880050030	Motor Kit, 12VDC 0.8kW, with adaptor ring and spindle	1	< \$2455	2015-04-30
15	\$ 0250090064	Lowering Valve Coil, 12VDC	1	< \$2455	2015-04-30
16	\$0940090066	P/Pk, KS 12VDC 0.8kW, 1.0cc, 1L vertical plastic tank	1	< \$2455	2015-04-30
16	\$ 0940090068	P/Pk, KS 24VDC 0.8kW, 1.0cc, 2L vertical plastic tank	1	S2455-S4740	2017-08-31
-	\$ 0250050123	Transformer, 400/24VAC 26va	1	< \$4755	2017-09-30
-	\$ 1000000394	Thermal Overload Relay, 1.6-2.5A	1	S2499-S5667	2019-03-31
-	\$ 0250050057	Contactor, 24VAC coil, Mini	1	< \$2860	2017-03-31
-	\$ 0790050348	Contactor, 24VAC coil, LC1-D09	1	S2860-S5666	2019-03-31
14	\$ 0880050013	Motor, 3-ph 2-pole 0.75kW 400V 80-frame with B14 flange	1	< \$4755	2017-09-30
16	\$ 0940090074	P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank	1	< \$4755	2017-09-30
-	\$ 0140120001	Door Catch, red plastic	1	< S2900	2017-05-31
-	\$ 0140120271	Plastic End Cap, 75 x 50 x 3 RHS, with interlock switch	1	< \$2550	2015-11-30
22	\$ 0790050408	Idec Solenoid Door Lock, 24VDC, plug-n-play	1	S2550-S7329	2023-03-31
22	\$ 0790050410	ldec Cable Kit, 5m, plug-n-play, complete with gland	1	S2550-S7329	2023-03-31
23	\$ 0250050065	Idec Actuator, rubber-cushioned	1	S2550-S7329	2023-03-31
24	\$ 0760120050	Idec Mounting Bracket, 8mm thick, waterjet cut	1	S2550-S7329	2023-03-31
-	\$ 0960050027	Guardmaster Safety Controller, 440C-CR30 [CAT3 only]	[1]	< \$7330	2023-03-31
	8 8 8 10 12 13 13 14 15 16 14 16 2 22 22 23 24 	- \$0790050101 8 \$0250050049 8 \$025005005050 10 \$0250050562 12 \$0880050017 13 \$0410050000 13 \$0410050039 14 \$0880050030 15 \$0250090064 16 \$0940090066 16 \$0940090068 - \$0250050123 - \$100000394 - \$0250050057 - \$0790050348 14 \$0880050013 16 \$0940090074 - \$0140120001 - \$0140120271 22 \$0790050408 22 \$0790050408 22 \$0790050405 24 \$0760120050	- \$0790050107 Fuse, 120/100A, Maxi Blade - \$0790050101 Fuse, 60A, Maxi Blade 8 \$0250050049 Voltmeter, 12VDC, battery monitor with red/green LED 8 \$0250050050 Voltmeter, 24VDC, battery monitor with red/green LED 10 \$0250050562 Battery, 12V/55Ah, GEL 12 \$0880050017 Motor Solenoid, 12V/200A, Trombetta 13 \$0410050000 Battery Charger, 12V/7.2A, PB-120N-13C 13 \$0410050039 Battery Charger, 12V/10A, GC160A12-AD1 14 \$0880050030 Motor Kit, 12VDC 0.8kW, with adaptor ring and spindle 15 \$0250090064 Lowering Valve Coil, 12VDC 16 \$0940090066 P/Pk, KS 12VDC 0.8kW, 1.0cc, 1L vertical plastic tank 16 \$0940090068 P/Pk, KS 24VDC 0.8kW, 1.0cc, 2L vertical plastic tank 17 \$0250050123 Transformer, 400/24VAC 26va 18 \$00000394 Thermal Overload Relay, 1.6-2.5A 19 \$0790050348 Contactor, 24VAC coil, Mini 10 \$0880050013 Motor, 3-ph 2-pole 0.75kW 400V 80-frame with B14 flange 10 \$0940090074 P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank 10 \$0940090074 P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank 10 \$0940090074 P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank 10 \$0940090074 P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank 10 \$0940090074 P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank 11 \$0940090074 P/Pk, KS 3-ph 2-pole 0.75kW, 0.75cc, 2L vertical plastic tank 12 \$0790050408 Idec Solenoid Door Lock, 24VDC, plug-n-play 13 \$0790050410 Idec Cable Kit, 5m, plug-n-play, complete with gland 14 \$0760120050 Idec Mounting Bracket, 8mm thick, waterjet cut 15 \$0960050027 Guardmaster Safety Controller, 440C-CR30 [CAT3 only]	- \$0790050107 Fuse, 120/100A, Maxi Blade 1 - \$0790050101 Fuse, 60A, Maxi Blade 1 8 \$0250050049 Voltmeter, 12VDC, battery monitor with red/green LED 1 8 \$0250050050 Voltmeter, 24VDC, battery monitor with red/green LED 1 10 \$0250050562 Battery, 12V/55Ah, GEL 1 11 \$0880050017 Motor Solenoid, 12V/200A, Trombetta 1 13 \$0410050000 Battery Charger, 12V/7.2A, PB-120N-13C 1 13 \$0410050039 Battery Charger, 12V/10A, GC160A12-AD1 1 14 \$088005030 Motor Kit, 12VDC 0.8kW, with adaptor ring and spindle 1 15 \$0250090064 Lowering Valve Coil, 12VDC 1 16 \$0940090066 P/Pk, KS 12VDC 0.8kW, 1.0cc, 1L vertical plastic tank 1 16 \$0940090068 P/Pk, KS 24VDC 0.8kW, 1.0cc, 2L vertical plastic tank 1 1 \$0250050123 Transformer, 400/24VAC 26va 1 1 \$0050050123 Transformer, 400/24VAC 26va 1 1 \$0790050348 Contactor, 24VAC coil, Mini 1 1 \$0790050348 Contactor, 24VAC coil, LC1-D09 1 1 \$0800000000000000000000000000000000000	- \$0790050107 Fuse, 120/100A, Maxi Blade 1 < \$2455

^{*} Quantity per machine

^[] Optional or applies to specified models only

^[] Optional or applies to specified models only





9. Warranty

9.1 Definitions

- 1. "Simpro" means Simpro Handling Equipment Limited, New Zealand 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.
- "Standard Products" means any Product displayed as a standard product on the Simpro website, 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: simpro.world/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: simpro.world/warranty-claim.

9.2 Coverage

- 1. Simpro provides a 24-month Back to Base Warranty on all Standard Products unless alternative terms have been agreed to in writing.
- 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 24-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 batteries is for 12 months only, and is distinct from the warranty on the rest of the machine. Information on maximising battery life is provided in the User Manual.

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.
- Warranty Claims may not be recognized unless the <u>Warranty Registration Process</u> 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

- 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: 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 develop over a period of time?
 - 2. Was the machine being used at the time?
 - 3. Is the fault intermittent?
 - 4. Are the batteries fully charged?
- 3. If repair is urgent, or the Agent cannot be contacted, the End User may contact Simpro directly.

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.
- Upon completion of the repair to an acceptable standard, the Agent shall complete the <u>Application For Warranty Consideration Form</u> 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 technician would take. A detailed Service Manual is available on request from Simpro, and all service visits should be conducted with this document 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 supplying Smart Lifting solutions for over 30 years. Founded in 1986 as a light engineer, the company has since built a unique position in the supply chain for specialist materials-handling equipment - from bin lifters and crate stackers to electric forklifts.

With business activities including design, manufacture, import, export, wholesale and retail, Simpro products now play a quiet role for thousands of companies around the world. Customers range from SMEs to bluechips, operating in sectors as diverse as warehouse logistics, food processing and waste management.

Simpro's OEM products are now sold around the world through a distribution network covering most large economies. The product range continues to evolve thanks to a policy of continuous R&D, new ideas and new partnerships.

Simpro is a family company, based in Auckland and registered with the New Zealand Companies Office as Simpro Handling Equipment Ltd (1827916).

This document may contain intellectual property belonging to Simpro, including patents, trademarks and/or registered designs.

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