

USER MANUAL

Simpro Dumpmaster® 55



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

1 kilogram (kg) = 2.2 pounds (lb)

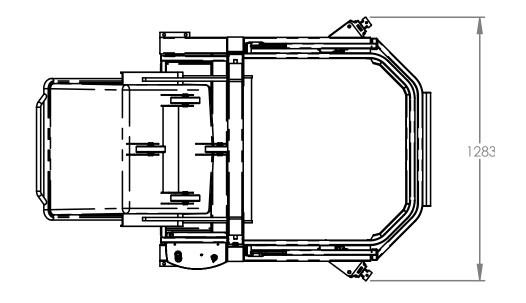
1 metre (m) = 1000 millimetres (mm) = 39.37 inches (in) = 3.28 feet (ft) = 1.09 yards (yd)

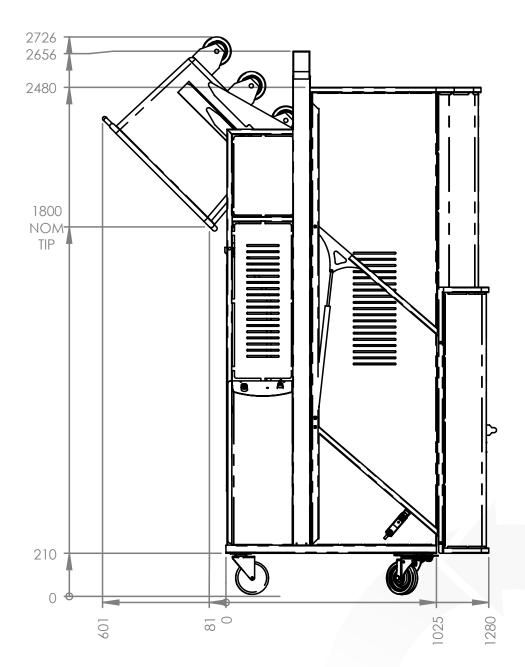
The following textual conventions are used throughout this document:

A Text in GREEN indicates a point of interest.

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

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A Drawing of generic Dumpmaster SS with 1800mm tipping height and Eurobin cradle.

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2 Introduction

Congratulations on your purchase of a Dumpmaster SS bin-tipping machine from Simpro. The Dumpmaster is the safest, fastest and most reliable bin tipper on the market, and has been continuously improved over more than twenty years.

Although similar in appearance to the standard Dumpmaster from which it is derived, the Dumpmaster SS is specifically modified to suit hygiene-critical applications. Changes include a polished stainless-steel finish to prevent the growth of microorganisms, rounded external surfaces for ease of cleaning, and uprated ingress protection suit high-pressure washdowns.

The Dumpmaster SS has been in production since 1994 and is relied upon by hundreds of companies around the world for critical production processes in industries such as food-processing and pharmaceutical manufacturing. No matter how it is used, the Dumpmaster SS has proven to be safe, reliable and economical to operate, year after year.

2.1 Key features

Key features of the Dumpmaster SS 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 very reliable, maintenance-free design.
- 4. Corrosion-resistant, hygienic construction from 304 stainless steel (316-grade stainless steel construction is also available).
- 5. An easy-to-clean polished finish.
- 6. A modular cradle system which allows for a wide range of bins to be emptied, including EN840 wheelie bins, DIN9797 Eurobins and Foodcap capsules.

2.2 Construction

The Dumpmaster SS consists of a stainless-steel frame with two masts and stabilizing legs, a bin cradle, a hydraulic ram, lifting chains, a powerpack, stainless-steel guarding and covers, a control panel, electronic control systems, and four castor wheels or mounting lugs.

2.3 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.

2.4 Assembly

The Dumpmaster SS is usually delivered fully assembled. However, in some cases guarding panels may be removed to minimise volume for shipping. Assembly instructions can be viewed at the following link: goo.gl/53XAd7.

2.5 Environmental restrictions

The Dumpmaster SS may be used indoors or outdoors. However, certain restrictions apply:

- 1. A minimum floor area of two 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;
- 5. Do not use in flammable, explosive, corrosive, acidic or alkaline environments.

2.6 Intended operational life

The intended operational life of the Dumpmaster is as follows:

Average Gross Bin Weight	Intended Operational Life
< 100kg	200,000 cycles
100kg - 200kg	150,000 cycles
200kg - 250kg	100,000 cycles
250kg - 300kg	75,000 cycles
> 300kg	50,000 cycles

2.7 Notes

- A This User Manual describes approved procedures for the operation, maintenance, and routine inspection of the Dumpmaster SS bin-tipping machine.
- A Operator(s) must read and understand this User Manual before using the machine.
- The User Manual shall be kept by the operator(s) and shall be read by the operator(s) until proficient with all aspects of standard use.
- A If the machine is to be leased, sold or otherwise transferred, then the User Manual shall accompany the machine.
- A Simpro reserves the right to modify the design of the Dumpmaster SS machine. If there is anything in the manual that is not consistent with the actual machine, the actual machine should be considered correct and the manual is only for reference.
- Any errors in this document should be reported by email to info@simpro.world.
- A Please contact your authorized Simpro agent if you encounter any problems.

3 Safety

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



 ${f A}$ A Hazard and Risk Assessment should be undertaken before the Dumpmaster SS is used for the first time, as described in <u>Section 3.3</u>.

3.1 Safety features

The safety features of the Dumpmaster SS are as follows:

- 1. Welded mesh or sheet-metal panels prevent personnel 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 keeps 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. disables the machine unless continuous operator input is received, or;
 - b. features a prominent Emergency Stop button to disable the machine.

3.2 Reasonably foreseeable misuse

The reasonably foreseeable misuse considered in the Dumpmaster SS design is as follows:

- 1. Use of the machine by untrained operators;
- 2. Tipping bins that the cradle is not specifically designed to hold;
- 3. Attempts to bypass door interlock or other safety systems;
- 4. Attempts to clear spilt product from under the cradle without following proper procedures;
- 5. Attempts to clean the machine without following proper procedures.

3.3 Hazard and Risk Assessment

Machinery owners are required by law to conduct a comprehensive Hazard and Risk Assessment for their equipment, considering 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 comprehensive site-specific Hazard and Risk Assessment, but an assessment of the generic risk factors associated with the Dumpmaster SS design. Blank template spaces are provided for the assessment of additional site-specific hazards.

 ${f \mathbb{A}}$ 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 all operators are aware of these residual hazards and what they must do to prevent harm to themselves or to others, as described in <u>Section 3.4</u>.

3.3.1 Risk Evaluation guide

As defined by ISO safety standards, any given hazard has an associated Risk Factor, from which the final Risk Evaluation is derived. These two elements can be calculated as follows.

3.3.1.1 Risk Factor calculation

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

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

3.3.1.2 Risk Evaluation

Once the Risk Factor has been calculated, the final Risk Evaluation can be assessed using the following table:

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

3.3.2 Identified Hazards

The following hazards have been identified with the Dumpmaster SS design. For each hazard, a full Risk Evaluation has been completed, and suitable control measures described.

7		ı		١
4				

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

	Entang	glemen	or ampu	ıtation	of fingers	or liml	bs in mov	/ing p	arts	
Operator	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2
	Guarding prevents access to all moving parts and trapping hazards.									
Other	LO:	1	FE:	4	DPH:	1	NP:	1	Risk Factor:	4
persons	As abo									
Control measures			•		•	_	_		e machine o all moving po	
Comments			ster SS is o solated.	design	ed so that	trapp	ing haza	rds ar	e eliminated	l,
	Cı	ushing	by una	uthori	zed rapid	desc	ent of cr	adle		
	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2
Operator	opera when the do	tion. A o the cra oor is clo cant sat	door safe dle is on t osed and ety marg	ty inte the gro locke jins en	erlock ensur ound, and d.	es tho the cr ne pro	at the do adle car	or cai	d guarding on only be operaised unlined of any steem	ened ess
Other	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2
persons	As abo	ove.								
Control measures	instruction the cro	tions, re adle wh	egarding nen raisec	keepii d.		and o	thers aw	ay fro	e machine om the area o	
Comments	A hydr	-	beed-cor	ntrol vo	alve limits th	ne mo	ıximum sı	beed	of descent i	n
	Ope	erator (or others	being	g hit by fal	ling o	or flying	debri	s	
Operator	LO:	1	FE:	4	DPH:	0.5	NP:	1	Risk Factor:	2
Operator			•						d guarding c e being tipp	_
Other	LO:	1	FE:	4	DPH:	0.5	NP:	1	Risk Factor:	2
persons			risk to oth g tipped		anding clos	se to t	he bin if	items	such as brok	cen
Control measures	regard	ding kee	eping him	iself ai		way f	rom the i	mach	ng signs ine while in u loves should	
Comments										

			Crushing	if the	machine	falls	over			
	LO:	0.5	FE:	2.5	DPH:	1	NP:	1	Risk Factor:	1.25
Operator Low risk as the Dumpmaster SS is very stable and the bin centre of gravity remains well within the machine's footprint throughout the tipping cycle.						-				
Other persons	LO:	0.5	FE:	2.5	DPH:	1	NP:	1	Risk Factor:	1.25
pcisoris	As abo		te on une	wan c	around or	aroun	d with a	done	of more thai	<u> </u>
Control measures	1:12.				ids from cl			•	or more mar	
Comments										
			Electroc	cutior	or electr	ic sho	ock			
Operator	LO:	1	FE:	4	DPH:	15	NP:	1	Risk Factor:	60
Орогатог	Some r	isk is al	ways pres	ent w	rith mains le	eads.				
Other	LO:	1	FE:	4	DPH:	15	NP:	1	Risk Factor:	60
persons	As abo									
Control measures	Check	all lead ds shou	ds frequer Id be che	ntly ai	e (RCD) to one of the condition of the c	r repla	ace if do	ımage	ed. Iectrician at	
Comments	Mains- AS6020 The ch	oowere 4.1. arger c	ed Dumpr on battery	-pow		omast	er SS tipp	oers is	d comply wit double-insul	
	LO:	2	FE:	4	DPH:	1	NP:	1	Risk	8
								liauida	Factor:	0
Operator	If the p	roduct erson,	could ca	iuse c I perso	ons are we	/hatso	ever to t		erator or to	any
Other	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
persons	As abo	ve.							racioi.	
Control measures	all othe Powde should	er perso r shoul be inst	ons are we d only be alled.	ell cle tippe	ar of the a d when th	rea. ere is 1	no wind,	and/	r, and ensure or a wind shi	eld
Comments					erial should Alternative		-		n a bin-tippe sused	er
					d in extrer					
Operator	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
Operaror		-			e used in e protective			r heat	, the operato	or
Other	LO:	2	FE:	4	DPH:	1	NP:	1	Risk Factor:	8
persons	As abo	ve.								
Control measures	The operator must wear appropriate protective equipment.									
Comments	2002	ction 2	5 for Dur	nma	ster SS env	•	4 - 1	1		

Site-specific	: hazard:				
	LO:	FE:	DPH:	NP:	Risk Factor:
Operator					
	LO:	FE:	DPH:	NP:	Risk
Other persons	-0.		5111.	711.	Factor:
Control measures					
Comments					
Site-specific	: hazard:				
Operator	LO:	FE:	DPH:	NP:	Risk Factor:
Operator					
Other	LO:	FE:	DPH:	NP:	Risk Factor:
persons					
Control measures					
Comments					
Site-specific	: hazard:				
Operator	LO:	FE:	DPH:	NP:	Risk Factor:
Operator					
Other	LO:	FE:	DPH:	NP:	Risk Factor:
persons					
Control measures					
Comments					
Site-specific	: hazard:				
Operator	LO:	FE:	DPH:	NP:	Risk Factor:
Other	LO:	FE:	DPH:	NP:	Risk Factor:
persons					
Control measures					

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

3.4 Residual Hazards

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

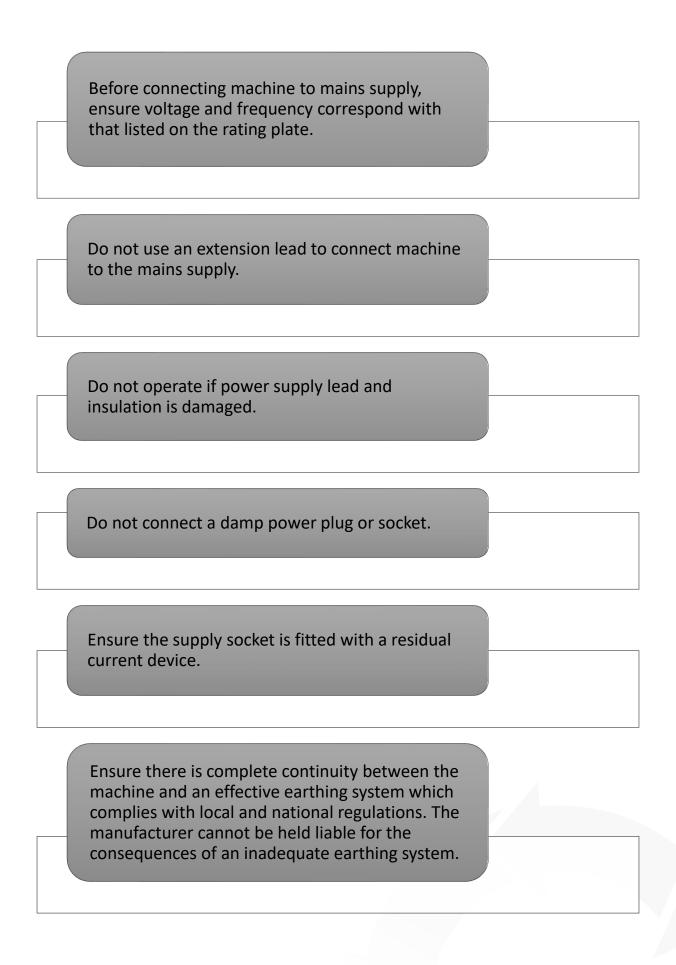
The operator has a legal responsibility to identify and assess these residual hazards, and to take **all reasonable precautions** to eliminate, isolate, or minimize them. Such precautions may include any or all of the following:

- A Regular training of operators.
- A Procedures to record and monitor that operators are properly trained.
- Implementation of Standard Operating Procedures.
- A Disciplinary measures to ensure the Standard Operating Procedures are observed.
- A Posting signage, floor marking, or other warnings as deemed appropriate.
- ▲ Taking steps to develop a culture of safety and open communication among machinery operators.

3.5 Safety Norms

The following safety norms must always be observed for the safe use of a Dumpmaster SS.

Only trained and authorised operators should be permitted to use the machine. Operators must read and obey the instructions displayed on the machine. Never operate machine on ground with a slope ratio greater than 1:12. Never operate machine on the edge of a raised dock or platform, unless designed for that application. Never operate 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 feet and hands well clear of bin and cradle when operating. Do not place feet or foreign objects under the side guards or door. Do not empty over-filled or overflowing bins.



4 Operating Instructions

The operating instructions for the Dumpmaster SS depend on which type of control system is fitted to the machine. There are three principal types of control system, as follows:

1. Standard Control System – Refer to Section 4.1

- Description: Standard machine, with no autocycle function or PLC controller.
- Identification: Control panel has only the RAISE and LOWER buttons.

2. Autocycle Control System - Refer to Section 4.2

- Description: Machine with autocycle timer, allowing bins to be emptied without continuous operator input.
- Identification: Control panel has RAISE and LOWER buttons, an EMERGENCY STOP button and a switch labelled MANUAL and AUTO.

3. Safety-Monitored Control System – Refer to Section 4.3

- Description: Machine has an electronic PLC control unit and a safety monitoring system to comply with safety standards such as ISO13849-1 and AS/NZS4024 up to PL(d)/Cat3 or higher.
- Identification: Control panel has RAISE and LOWER buttons, an EMERGENCY STOP button, a switch labelled MANUAL and AUTO, and a large blue button labelled RESET. The control panel also has a decal describing the level of safety compliance.

4.1 Operating instructions (standard control system)

A How to operate a standard machine, with no autocycle function or PLC controller.

1. Before operation, check that the machine is stable and safe to use:

- a. Machine is on level ground, with a slope of 1:12 or less.
- b. All covers and safety guards are in place.
- c. Wheel brakes are applied, and/or the feet are wound down onto the ground.
- d. All personnel other than the operator are well clear of the machine.
- e. The cradle is fully lowered.
- 2. Open the door and place the full bin onto the cradle, taking care that it is properly positioned, then shut the door.
- 3. **Press and hold the RAISE button** until the bin reaches the inverted position, then release. Wait for the contents of the bin to empty.
- 4. Press and hold the LOWER button until the cradle returns to the ground.
- 5. Open the door and remove the empty bin.
- 6. Repeat from step 1) as required.

A Release the RAISE or LOWER button to stop the cradle at any time.

4.2 Operating instructions (autocycle control system)

A How to operate a machine with autocycle timer, allowing bins to be emptied without continuous operator input.

Dumpmaster SS models that are fitted with an autocycle control system may be used in either 'Manual' or 'Automatic' mode, selected using a switch on the control panel.

The operating procedure for each mode is as follows:

4.2.1 Automatic mode

- 1. Before operation, check that the machine is stable and safe to use:
 - a. Machine is on level ground, with a slope of 1:12 or less.
 - b. All covers and safety guards are in place.
 - c. Wheel brakes are applied, and/or the feet are wound down onto the ground.
 - d. All personnel other than the operator are well clear of the machine.
 - e. The cradle is fully lowered.
- 2. Turn the mode-selector switch to AUTO mode.
- 3. Open the door and place the full bin onto the cradle, taking care that it is properly positioned, then shut the door.
- 4. **Press the RAISE button once**. The cradle will automatically lift, hold the bin inverted for a short time, and return to ground level.
- 5. Open the door and remove the empty bin.
- 6. Repeat from step 1) as required.
- A Press the EMERGENCY STOP button at any time to stop the cradle.

4.2.2 Manual mode

- 1. Before operation, check that the machine is stable and safe to use:
 - a. Machine is on level ground, with a slope of 1:12 or less.
 - b. All covers and safety guards are in place.
 - c. Wheel brakes are applied, and/or the feet are wound down onto the ground.
 - d. All personnel other than the operator are well clear of the machine.
 - e. The cradle is fully lowered.
- 2. Turn the control panel selector switch to MANUAL mode.
- 3. Open the door and place the full bin onto the cradle, taking care that it is properly positioned, then shut the door.
- 4. **Press and hold the RAISE button** until the bin reaches the inverted position, then release. Wait for the contents of the bin to empty.
- 5. **Press and hold the LOWER button** until the cradle returns to the ground.
- 6. Open the door and remove the empty bin.
- 7. Repeat from step 1) as required.
- A Release the RAISE or LOWER button, or press the EMERGENCY STOP button at any time to stop the cradle.

4.3 Operating instructions (safety-monitored control system)

How to operate a machine with an electronic PLC control unit and a safety monitoring system to comply with safety standards such as ISO13849-1 and AS/NZS4024 up to PL(d)/Cat3 or higher.

Dumpmaster SS models that are fitted with a safety-monitored control system may be used in either 'Manual' or 'Automatic' mode, selected using a switch on the control panel.

The operating procedure for each mode is as follows:

4.3.1 Automatic mode

- 1. Before operation, check that the machine is stable and safe to use:
 - a. Machine is on level ground, with a slope of 1:12 or less.
 - b. All covers and safety guards are in place.
 - c. Wheel brakes are applied, and/or the feet are wound down onto the ground.
 - d. All personnel other than the operator are well clear of the machine.
 - e. The cradle is fully lowered.
- 2. Turn the control panel mode-selector switch to AUTO mode.
- 3. Open the door. If the door is locked, press the LOWER button to unlock it.
- 4. Place the full bin on the cradle, ensuring it is properly positioned, and shut the door.
- 5. Press and hold the blue RESET button for two seconds.
 - a. The safety system will now conduct an auto-diagnostic check. If no faults are detected, the blue light will go out and the machine will be enabled.
 - b. If the safety system detects a fault, the blue light will not go out and the machine will be disabled. The fault must be found and corrected before the machine can be used refer to <u>Section 5.8</u>.
- 6. **Press the RAISE button once**. The cradle will automatically lift, hold the bin inverted for a short time, and return to ground level.
- 7. Open the door and remove the empty bin.
- 8. Repeat from step 1) as required.
- A Once the cradle has lowered, the door is automatically unlocked for about 15 seconds. If the door re-locks, press the LOWER button to unlock it at any time.

A Press the EMERGENCY STOP button at any time to stop the cradle.

4.3.2 Manual mode

- 1. Before operation, check that the machine is stable and safe to use:
 - a. Machine is on level ground, with a slope of 1:12 or less.
 - b. All covers and safety guards are in place.
 - c. Wheel brakes are applied, and/or the feet are wound down onto the ground.
 - d. All personnel other than the operator are well clear of the machine.
 - e. The cradle is fully lowered.
- 2. Turn the control panel selector switch to MANUAL mode.
- 3. Open the door. If the door is locked, press the LOWER button to unlock it.
- 4. Place the full bin on the cradle, ensuring it is properly positioned, and shut the door.
- 5. Press and hold the blue RESET button for two seconds.
 - a. The safety system will now conduct an auto-diagnostic check. If no faults are detected, the blue light will go out and the machine will be enabled.
 - b. If the safety system detects a fault, the blue light will not go out and the machine will be disabled. The fault must be found and corrected before the machine can be used refer to <u>Section 5.8</u>.
- 6. **Press and hold the RAISE button** until the bin reaches the inverted position, then release. Wait for the contents of the bin to empty.
- 7. **Press and hold the LOWER button** until the cradle returns to the ground.
- 8. Open the door and remove the empty bin.
- 9. Repeat from step 1) as required.
- A Once the cradle has lowered, the door is automatically unlocked for about 15 seconds. If the door re-locks, press the LOWER button to unlock it at any time.
- Release the 'Raise' or 'Lower' button, or press the 'Emergency Stop' button at any time to stop the cradle.

5 Maintenance

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

- A Contact your Simpro agent if repair or service work is required.
- All repair and service work must be carried out by qualified 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.
- A Replacement hydraulic fluid must comply with specifications in <u>Section 5.5.5.</u>
- A detailed Service Manual giving specific testing and repair instructions is available on request from Simpro.

5.1 Quick Troubleshooting Guide

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

Problem	Possible Causes	Remedy
	Flat Battery	Recharge the battery
	Blown fuse, faulty plug, or faulty power lead	Check and rectify
The machine will not lift bins, and the motor	Faulty switch or wiring	Check and rectify
does not run	Faulty raise relay or contactor	The relay contactor should click when the 'up' button is pressed – if not, check and replace
	Interlock switch on door not working	Contact your agent for details and / or wiring diagrams
	Bin too heavy	Reduce bin weight
The machine will not lift bins, although the	Pressure-relief valve set too low	Contact your agent
motor runs	Motor running wrong direction (3-phase only)	Swap phase wires in plug
Cradle will not come	Cradle sticking in masts	Spray inside of masts at top of slots. Smear grease on top of the curved tipping tracks". Lubricate the roller arm at top of cradle
down from the fully raised position	Lift ram jamming	Contact your agent
тавеа рознот	Faulty switch, wiring, or lowering valve	The lowering valve should click when the button is pressed – if not, check the switch, wiring and electro-magnetic coil
Cradle jams part way	Follower roller not turning freely	Lubricate the roller
down	Roller arm twisted or cradle sitting out of level	Check and straighten if necessary

5.2 Cleaning

The Dumpmaster SS may be cleaned with a low-pressure water jet, a cloth and a mild cleaning solution. Cleaning should be done with the cradle in the fully lowered position.

If the application requires that the cradle be raised for cleaning, the control system may be modified to allow this, while maintaining operator safety – refer to <u>Section 5.7.1</u>.

▲ Do not clean the Dumpmaster SS with a high-pressure water jet or waterblaster.

5.2.1 Ingress protection

Item	Ingress Protection
Push buttons	IP66
Switches	IP66
Lamps	IP66
Door lock	IP66
Coded magnetic switch	IP66
Motor enclosure	IP66
Overall	IP66 (available options: IP69K)

5.3 Cradle jams

Occasionally the bin cradle may become jammed at some point in the tipping cycle. This is usually a minor issue which may be easily rectified.

- ⚠ The cradle is not powered down it is lowered by gravity alone.
- All machines have a solenoid-operated lowering valve and a pressure-compensating flow control valve.
- A Some machines also have a hose-burst valve on the ram port, and an external manually-adjustable in-line flow control valve.

5.3.1 Cradle jams while raising

If the cradle jams while raising the cause is almost always a mechanical fault.

- 1. Attempt to visually identify the cause or problem.
- 2. Lower the cradle to ground level if possible
- 3. Open the door, remove the bin, and rectify the problem.
- A If the bin is too heavy, or if the pressure-relief valve is set too low, the cradle may stop part-way through the lifting cycle. Altering the setting in the relief valve must be done only by a suitably qualified person, and authorisation must be obtained from Simpro.

5.3.2 Cradle jams while lowering

If the cradle jams on the way down, or has jammed on the way up but will not come down, it must be identified whether the jamming is due to a hydraulic, electrical, or mechanical cause.

5.3.2.1 Hydraulic fault

- 1. If the hose-burst valve has operated, the oil in the lift ram(s) cannot get out until pressure on the 'power-pack side' of the valve exceeds the pressure in the rams:
 - If a hose or fitting has burst or come loose, correct this issue.

- Raise the cradle slightly to reset the hose-burst valve.
- The cradle will now lower normally.
- 2. If the lowering valve does not open (whether due to a hydraulic or electrical fault), use the following procedure to lower the cradle to the ground:
 - Empty the bin if there is any product remaining in it.
 - Manually disable the safety door interlock as described in <u>Section 5.7.1</u>, and open the door.
 - Attach lifting chains or slings to a hoist, and take the weight of the cradle.
- A Never place any part of your body underneath the cradle unless it is securely supported.
 - Unscrew the fitting attaching the steel pipe to the power-pack, and hold the end of the pipe over a container with a capacity of at least two litres.
 - Lower the cradle slowly, collecting the oil in the container. When fully lowered, reconnect the pipe and fitting, and top up the oil tank.
 - Repair the fault, and re-enable the safety door interlock.

5.3.2.2 Mechanical fault

- 1. Empty the bin if there is any product remaining in it.
- 2. Manually release the safety door interlock as described in <u>Section 5.7.1</u>, and open the door.
- 3. Provide support for the cradle, either with a structure underneath or with a sling holding it to the top of the main frame. Allow for it to fall no more than 50mm.
- A Never place any part of your body underneath the cradle unless it is securely supported.
- 4. Attempt to identify the cause of the jamming. The most likely causes are:
 - The lifting chain may have derailed from the plastic guide at the top of the mast, on the side opposite the lift ram
 - A mast may have been bent or damaged, jamming one of the mast rollers
 - On machines with a single 'tipping track' in the middle, the top part of the track may have been bent, interfering with the correct geometry of the 'follower roller'.
 - Lack of lubrication on the follower roller, or the main cradle axle
 - The cradle may be sitting out of level, due to poor adjustment of the lifting chains or to a breakage.
 - The 'roller arm(s)' may be pressing against the 'tipping track', due to the cradle sitting out of level, or not being properly centred between the masts.
- 5. Once the problem has been identified, correct it and lower the cradle to the ground.
- 6. Re-enable the safety door interlock.
- 7. Run the machine through several full cycles with no load to ensure the problem has been properly resolved. Then test with a full load.
- 8. If there are no further problems, return the machine to service.

5.4 Battery and charger

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

Battery-powered Dumpmaster SS machines are fitted with two deep-cycle sealed gel batteries and an automatic float charger. As a rule of thumb, one full charge is sufficient to empty 10 tonnes of product, but this is dependent on the tipping height and the condition of the battery.

5.4.1 Battery indicator

The Dumpmaster SS is fitted with a digital voltage indicator on the control panel, indicating the momentary electromotive force generated by the batteries. Because the voltage reading will fluctuate when the machine is operated (as some power is drawn by the motor), the voltage should only be used as an indicator of battery state while the machine is at rest.

While the Dumpmaster is at rest:

- 1. When the indicator shows 25.0V or above, the batteries are sufficiently charged.
- 2. When the indicator shows between 24.0V and 25.0V, the batteries still have some charge, but should be recharged as soon as possible.
- 3. When the indicator shows below 24.0V, the batteries are discharged. The machine should not be used, and should be placed on charge immediately.
- Attempting to use a Dumpmaster with discharged batteries may permanently reduce the battery capacity or damage the motor.
- A Ideally, the batteries should be recharged daily, or whenever the indicator shows below 24.0V.



5.4.2 Battery charging

To recharge the batteries, simply plug an extension lead into a standard 1-phase 110v-240v outlet, and into the appliance socket on the side of the Dumpmaster.

The onboard digital float charger automatically adapts to different supply voltages, manages the charging cycle to maximise battery life and prevents overcharging.

A full recharge typically takes around 10 hours. The machine may be used while on charge.



A The battery charger takes around three minutes to deliver enough power to empty a 200kg bin at 1800mm. This means that a battery-powered machine can be left permanently plugged in, and used like a 1-phase mains-powered machine.

5.4.3 Battery maintenance

High-quality deep-cycle sealed gel batteries require no regular maintenance and should last up to five years.

To obtain the maximum life, the batteries should be recharged daily, or whenever the indicator shows below 24.0V.

Battery life is dependent on several factors, including the number of charge/discharge cycles, the depth of discharge, and the age of the battery. In particular, using the machine while the battery voltage is below 24.0V will reduce the life of the batteries.

5.4.4 Battery storage

The sealed gel batteries have a two-year shelf life, and should be stored in accordance with the following requirements:

- 1. Clean, dry and well-ventilated warehouse
- 1. Temperature of 5-40°C.
- 2. Upright orientation.
- 3. Out of direct sunshine, and away from heat sources.
- 4. No severe mechanical impacts, compression or distortion.
- 5. No contact with harmful substances, including metal filings, water and chemicals.

5.5 Hydraulic system

5.5.1 Powerpack

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

5.5.2 Control valves

The hydraulic system has four primary control valves:

- 1. Check valve
- 2. Pressure-relief valve
- 3. Solenoid lowering valve
- 4. Pressure-compensating lowering-speed valve (this automatically regulates the lowering speed, regardless of the load on the cradle).

5.5.3 Lift Ram

The lift ram is a single-acting displacement type, very robust and reliable, but easy to maintain should the need arise. A steel tube runs from the power-pack to the lift ram. On some models, a hose-burst valve is fitted directly to one or both ram ports.

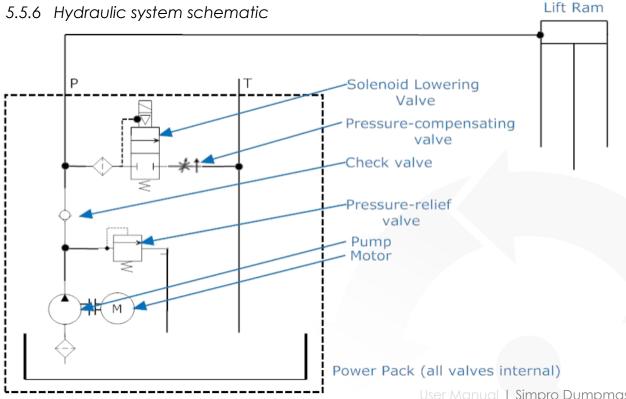
5.5.4 Maintenance

As the pump only runs while the cradle is lifting, it can take at least 500 bins to reach 1 hours' run time of the power-pack. The oil should be replaced, and the suction filter cleaned after 12 months, then after every 100 hours of run time. The lowering valve should also be removed and cleaned at this time.

5.5.5 Hydraulic fluid

Any good-quality mineral oil-based hydraulic fluid suitable for hydraulic systems can be used. The fluid should have physical lubricating and chemical properties as specified by:

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



5.6 Safety door

5.6.1 Lift-up door (standard)

The standard Dumpmaster SS is fitted with a single lift-up door. This type of door is supported by gas struts and takes up a minimum of space, but has several moving parts and will benefit from occasional servicing as follows:

- 1. The arm pivot points should be lubricated occasionally (both ends of all four arms).
- 2. Check the door safety interlock to ensure it works as intended, as follows:
 - a. Firstly, raise the cradle a little off the ground and try to open the door. If it can open, the switch operated by the cradle may need adjusting or replacing. Contact the agent or manufacturer for instructions.
 - b. Next, open the door then press the Raise and Lower buttons and make sure the machine does not run. If it does, contact the agent or manufacturer for instructions.
- 3. Ensure the retainer caps on the arm pivot bars are in place, and that all fixings are tight.

The gas struts are designed to balance the weight of the door throughout its travel, and hold it open. Over time, the gas in the struts can leak out, resulting in reduced lifting force. If the struts do not hold the door open, one or both may need to be replaced.

5.6.2 Side-hinge door (optional)

Some custom Dumpmaster SS models are fitted with a side-hinge safety door. 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 the door safety interlock to ensure it works as intended, as follows:
 - a. Firstly, raise the cradle a little off the ground and try to open the door. If it can open, the switch operated by the cradle may need adjusting or replacing. Contact the agent or manufacturer for instructions.
 - b. Next, open the door then press the Raise and Lower buttons and make sure the machine does not run. If it does, contact the agent or manufacturer for instructions.
- 3. Check that all fixings are tight.

5.7 Safety door interlock

The Dumpmaster SS is fitted with either one or two solenoid-operated safety door interlocks, Idec model HS5E-D4403-G or HS5E-F4403-G. These are 'power-to-unlock' type, with four internal contacts which are used to determine whether the door is closed and locked.

5.7.1 Interlock manual override

A This work should only be carried out by a suitably qualified technician.

A The Override Key should be stored in a safe location, accessible only to supervisors and authorised technical staff.

All routine cleaning and maintenance on the Dumpmaster SS should be conducted with the cradle in the fully-lowered position. If for any reason the interior of the safety cage needs to be accessed **while the cradle is raised**, the interlock(s) can be manually disabled by carrying out the following procedure.

- 1. Insert the yellow Override Key into the triangular cam on the interlock(s).
- Turn the Override Key fully to the UNLOCK position.
 The safety door can now be opened even with the cradle raised.
 - On machines with a standard control system, the safety







- door will now function as a switch the cradle **cannot be moved** while the door is open, but can still operate while the door is shut.
- On machines with a safety-monitored control system, the system will enter
 'Safe Mode' the machine is disabled, and the cradle cannot be moved until the door is closed, the interlock is re-enabled, and the safety system is reset.
- 3. Open the safety door and carry out cleaning or maintenance as required.
- 4. Once the work is complete, shut the safety door and turn the Override Key fully to the LOCK position.
- 5. Remove the Override Key and store in a safe location away from the machine.
- 6. If the machine is fitted with a safety-monitored control system, press the blue RESET button for two seconds to check and reset the safety system.
- 7. Fully test the machine and all safety functions before returning to service.
- ▲ Do not open the safety door with the Override Key inserted but not fully turned (less than 90°) as this may damage the interlock or cause operational failures.
- A Do not apply excessive force to the Override Key or the interlock components.
- Do not leave the Override Key inserted in the interlock during normal operations.
- ▲ Do not store the Override Key in a location where it can be freely accessed by unauthorised staff.

5.7.2 Interlock specifications

A summary of the interlock specifications is included below. The complete Idec user manual can be downloaded from this link: https://goo.gl/iafPol.

HS5E Safety Door Lock Switches

Small safety switch with four poles and solenoid. Ideal for applications in small spaces.

- Compact body. 35 × 40 × 146 mm.
- Four-pole internal switches.
- Gold-plated contacts.
- . Spring lock and solenoid lock types are available.
- . The head orientation can be rotated, allowing 8 different actuator entries.
- A metal entry slot ensures the high durability.
- . An actuator with rubber cushions alleviates the impact of actuator entry into the slot.
- . The locking strength is 1000N minimum (GS-ET-19).
- · Integral cable design minimizes wiring, preventing wiring mistakes.
- · LED pilot light indicates the solenoid status.
- · RoHS directive compliant.
- . Degree of protection: IP67 (IEC60529)
- NC contacts are of direct opening action (IEC/EN60947-5-1).
- Proprietary actuators prevent unauthorized opening (ISO14119, EN1088)
- Double insulation structure.

Spring Lock Type

- · Automatically locks the actuator without power applied to the
- . After the machine stops, unlocking is completed by the solenoid, providing high safety features.
- · Manual unlocking is possible in the event of power failure or mainten ance.

Solenoid LockType

- The actuator is locked when energized.
- . The actuator is unlocked when de-energized.

Ratings

• Contact Ratings

Rated Insulation	n Valt	250V (between LED or solenoid and ground: 30V) 2.5A			
Rated Thermal	Curre				
Rated Voltage (Ue)		30V	125V	250V
Rated Current (le) (Note 2)		Resistive load (AC-12)	-	2A	1A
	AC	Inductive Load (AC-15)	-	1A	0.5A
		Resistive load (DC-12)	2A	0.4A	0.2A
	DC	Inductive Load (DC-13)	1A	0.22A	0.1A

. Minimum applicable load (reference value): 3V AC/DC, 5 mA

Note 1: UL rating: 125V Note 2: TUV, BG rating: AC-15, 0.5A/250V, DC-13, 0.22A/125V UL, c-UL rating: Pilot duty AC 0.5A/125V, Pilot duty DC 0.22A/ 125V

Solenoid

Locking Mechanism	Spring Lock Type	Solenoid Lock Type	
Rated Voltage	24V DC		
Rated Current	266 mA (initial value)		
Col Resistance	90Ω (at 20°C)		
Pickup Voltage	Rated voltage x 85% ma	oximum (at 20°C)	
Dropout Voltage	Rated voltage × 10% minimum (at 20°C)		
Maximum Continuous Applicable Voltage	Rated voltage x 110%		
Maximum Continuous Applicable Time	Continuous		
Insulation Class	Class F		

Pilot Light

Rated Voltage	24V DC	
Rated Current	10 mA	
Light Source	LED	
Light Color	Green	











Specifications

Applicable Standards	ISO14119 IEC60947-5-1 EN80947-5-1 (TÜV approval) GS-ET-19 (BG approval) US08 (ÜL recognized) GSA C22.2, No. 14 (o-UL recognized)			
	IEC60204-1/EN60204-1 (applicable standards for use)			
Operating Temperature	-25 to 50°C (no freezing)			
Relative Humidity	45 to 85% (no condensation)			
Storage Temperature	-40 to +80°C (no freezing)			
Pollution Degree	3			
Impulse Withstand Voltage	2.5 kV (between LED, solenoid and grounding: 0.5 kV)			
Insulation Resistance (500V DC megger)	Between live and dead metal parts: 100 MΩ minimum Between live metal part and ground: 100 MΩ minimum Between live metal parts: 100 MΩ minimum Between terminals of the same pole: 100 MΩ minimum			
Electric Shock Protection	Class II (IEC61140)			
Degree of Protection	IP67 (IEC60529)			
Shock Resistance	Operating extremes: 100 m/s ² Damage limits: 1000 m/s ²			
Vibration Resistance	Operating extremes: 10 to 55 Hz, amplitude 0.35 mm minimum Damage limits: 30 Hz, amplitude 1.5 mm minimum			
Actuator Operating Speed	0.05 to 1.0 m/s			
Direct Opening Travel	Actuator HS9Z-A51:11 mm minimum Actuator HS9Z-A51A/A52/A52A/A53/A55:12 mm minimum			
Direct Opening Force	80N minimum			
Tensile Strength when Locked	1000N minimum (GS-ET-19)			
Operating Frequency	900 operations per hour			
Mechanical Life	1,000,000 operations minimum (GS-ET-19)			
Electrical Life	100,000 operations minimum (operating frequency 900 operations per hour, load AC-12, 250V, 1A)			
Conditional Short-drout Current	50A (250V) (Use 250V/10A fast acting type fuse for short- circuit protection.)			
Cable	UL2464, No. 21 AWG (8-core: 0.5 mm² or equivalent/core)			
Cable Diameter	e7.6 mm			
Weight (approx.)	400g (HS5E-***01)			



5.8 Safety Monitoring System

A If you do not operate a machine with a safety-monitored control system to comply with ISO 13849-1 or AS/NZS 4024 Cat3/Cat4/PL(a)/PL(e), please disregard this section.

5.8.1 Overview

Machines with a safety rating of PL(d)/Cat3 or higher are fitted with a Rockwell CR-30 Safety Relay to monitor the safety systems. The CR30 Safety Relay continuously monitors the status of the Emergency Stop contacts, door lock, 'cradle-lowered sensor', and 'tipper in position sensor' (if fitted).

The Safety Relay goes into 'Safe Mode':

- 1. If any fault is detected;
- 2. Whenever the door is unlocked/opened;
- 3. Whenever the Emergency Stop is pressed;
- 4. Whenever the tipper is moved away from the 'safe' position (optional).

Whenever the machine is in Safe Mode the blue Reset lamp glows, and the machine must be reset before it can be used to empty a bin. To reset, ensure the door is correctly closed and locked, the Emergency Stop is released, and the tipper is in the Safe position, then press and hold the Reset button for 1 - 2 seconds, then release it (the lamp will go out). If any of the safety functions above are not correct, or if a fault has been detected in any of the equipment or connections, the system will not reset.

This documentation is to assist an engineer or electrician to find and repair any fault preventing the system from resetting. Most faults can be traced from the LEDs on the CR30 safety relay itself; some locks and sensors also have LEDs to assist in trouble-shooting.

5.8.2 440C-CR30 Safety Relay

The 440C-CR30-22BBB (CR30) relay is a software-configurable safety relay. This device is intended to be part of the safety-related control system of a machine. The CR30 safety relay is based on the Micro800 platform and must be configured using a personal computer (PC) with the Allen-Bradley® Connected Components Workbench software.

The housing is red to signify it as a safety device and to distinguish it from the grey-coloured standard controllers.

The CR30 safety relay accommodates up to 24 safety monitoring functions. Examples of safety monitoring functions are single channel input, dual channel input, two hand control, reset, and feedback. It has 22 embedded safety rated inputs and outputs and accepts up to two plug-in modules, each of which has four standard inputs and four standard outputs.

The CR30 safety relay can be configured to accept two single-wire safety inputs and to



provide two single-wire safety outputs. This feature allows the CR30 safety relay to be an integral part of an extensive machine safeguarding system.

There are 10 Input LED's, 5 General Status LED's, and 6 Output LED's. These can help identify faults and do basic trouble-shooting. The input and output LED's are set up when designing the program. A print-out of the program function and what each LED refers to should be provided with each machine.

The 'PWR' and 'RUN' LED's should be on when the system is ready for use. If the 'FAULT' or 'LOCK' LED's are showing, try cycling the power. If they remain on, a computer with 'Connected Components Workbench' software installed must be connected to identify and resolve the problem.

5.8.3 Troubleshooting

Faults in the CR30 relay fall into two categories: recoverable faults, and non-recoverable faults. Non-recoverable faults require power cycling to recover after the fault is corrected. Recoverable faults can be cleared by eliminating the cause of the fault and cycling the inputs associated with the fault. The output that is connected to an input with that fault is switched off. The other outputs, which are not affected by the fault, will continue to work.

Examples of recoverable faults include:

- SMF Faults
- Cross loop
- Simultaneity Faults
- Reset button fault

- Muting: Synchronization time exceed
- Muting time exceeded
- Sequence fault

5.8.4 Configuration

The CR30 is software configurable using the Rockwell Automation 'Connected Components Workbench' (CCW) software. Connected Components Workbench is a set of collaborative tools supporting the CR30 safety relays. The CCW is used to configure the CR30, program the Micro 800 controllers, and configure many PowerFlex drives and PanelView graphic display terminals.

The CCW software is free and can be downloaded from <u>this link</u>. To help you configure your relay through the Connected Components Workbench software, you can refer to the Connected Components Workbench Online Help (provided with the software).

The CR30 has a USB interface for connection to a personal computer for configuration. Use a standard USB A Male to B Male cable for connecting to the relay.



6 Handling, transportation and storage

6.1 Moving

If the machine is fitted with castor wheels, it may be easily moved when standing upright, using the grab handles attached to the frame. The bin cradle should always be just off the ground when moving the machine.

If the machine has bolt-down lugs, it may be moved using a fork-hoist or similar device, with a lifting sling attached to the lugs provided, or to the crossmember at the top of the frame.

A

Extra care should be taken when moving the Dumpmaster SS on sloping ground.

6.2 Lifting

Carry out the following procedure when lifting the machine:

- 1. Confirm the weight of the machine on the rating plate, and ensure the lifting equipment that is to be used has sufficient capacity.
- 2. Affix a lifting sling to the lugs provided, or to the crossmember at the top of the frame.
- 3. Use one person to operate the lifting equipment, and at least one other person to hold the machine steady and watch for obstructions.
- 4. Slowly lift, move and lower the machine into place, ensuring it remains fully upright.

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

6.3 Transportation

Carry out the following procedure when preparing the machine for transport:

- 1. Where possible, transport the machine lying in a horizontal position.
- 2. If the machine must be transported upright, apply both footbrakes.
- 3. Tie the machine into place with strops rated for at least 1000kg, and ensure it is securely fastened against lateral forces from any direction.

Only use marked tie-down points to secure the machine.

6.4 Storage

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

- 1. Clean the machine thoroughly.
- 2. Carry out several full tipping cycles, then lower the cradle to the ground.
- 3. Full charge the batteries and apply a suitable contact oil to the electrical contacts.
- 4. Turn the key switch and the Master Isolator switch to 'Off'.
- 5. Apply a thin layer of silicone lubricant to exposed surfaces of moving parts.

7 Safety Inspections

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

The inspection schedule is divided into three parts: weekly, monthly and annual inspections. The procedures for each inspection are provided in the following pages, along with logs for documenting the results.

- A Simpro strongly recommends that safety inspections are carried out according to the schedule described in this section.
- A Operators should immediately stop using the machine and request an inspection if any fault or abnormal operation is observed.

7.1.1 Pre-inspection checklist

- 1. Wear suitable Personal Protective Equipment, including safety boots and protective eyewear.
- 1. Ensure there are no ignition sources nearby.
- 2. Lower the cradle and remove bin.
- 3. Turn off the key switch and unplug the charging lead.
- 4. Remove the powerpack cover.
- 5. Clean the powerpack and electric circuitry with compressed air. Never use water or chemicals.
- 6. Always use height safety equipment when servicing elevated areas such as the top of the mast.

7.1.2 Weekly inspection

The following inspection should be carried out each week, and the results recorded in the log on the following page.

	Weekly Inspection Checklist				
Category	No.	Item	Check		
General	1	Entire machine	Conduct a complete tipping cycle and check for any faults or abnormal behaviour.		
Safety systems	2	Door lock actuator	Check the actuator is securely attached to the door with security screws, and the lock bolt enters the actuator freely and smoothly, without force. Check that the actuator locks the door while the cradle is raised above 100mm.		
Mechanical	3	Inside masts	If the tipping motion appears to be jerky or inconsistent, spray a small amount of silicone		
systems	4	Roller pivot arm	lubricant inside the masts and on the roller pivot arms to minimise friction.		

Dela	Service	1	Checks	Notes on repairs or	Parts and
Date	Person	Location	complete	maintenance required	materials used

7.1.3 Monthly inspection
The following inspection should be carried out each month, and the results recorded in the log on the following page.

	Monthly Inspection Checklist				
Category	No.	Item	Check		
General	1	Entire machine	Conduct a complete tipping cycle and check for any faults or abnormal behaviour.		
Hydraulic	2	Hydraulic ram	Check there are no oil leaks.		
systems	3	Oil reservoir	Check the level of hydraulic oil.		
Electrical systems	4	Mains power lead	Check that the lead is in good condition.		
Safety systems	5	Door lock actuator	Check the actuator is securely attached to the door with security screws, and the lock bolt enters the actuator freely and smoothly, without force. Check the door is locked while the cradle is raised above 100mm.		
	6	Inside masts	Lightly lubricate with silicone spray.		
	7	Roller pivot arm	Lightly lubricate with silicone spray.		
Mechanical systems	8	Door hinges	Lightly lubricate with silicone spray.		
	9	Cradle axle	Lightly lubricate with silicone spray.		
	10	Castor wheels (if fitted)	Check that the castor wheels are running smoothly and the brakes working correctly.		

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

7.1.4 Annual inspection
The following inspection should be carried out each year, and the results recorded in the log on the following page.

	Annual Inspection Checklist				
Category	No.	Item	Check		
General	1	Entire machine	Conduct a complete tipping cycle and check for any faults or abnormal behaviour.		
Hydraulic	2	Hydraulic ram	Check there are no oil leaks.		
systems	3	Oil reservoir	Check the level of hydraulic oil.		
Electrical systems	4	Mains power lead	Check that the lead is in good condition.		
Safety systems	6	Door lock actuator	Check the actuator is securely attached to the door with security screws, and the lock bolt enters the actuator freely and smoothly, without force. Check the door is locked while the cradle is raised above 100mm.		
	7	Lifting chains	Check the length and condition of the lifting chains. If the length is outside the allowable tolerance, or there are signs of corrosion or wear, they should be replaced. Lightly lubricate with silicone spray.		
	8	Ram rollers	Lightly lubricate with silicone spray.		
	9	Follower rollers	Lightly lubricate with silicone spray.		
Mechanical systems	10	Inside masts	Lightly lubricate with silicone spray.		
,	11	Roller pivot arm	Lightly lubricate with silicone spray.		
	12	Door hinges	Lightly lubricate with silicone spray.		
	13	Cradle axle	Lightly lubricate with silicone spray.		
	14	Castor wheels (if fitted)	Check that the castor wheels are running smoothly and the brakes working correctly.		

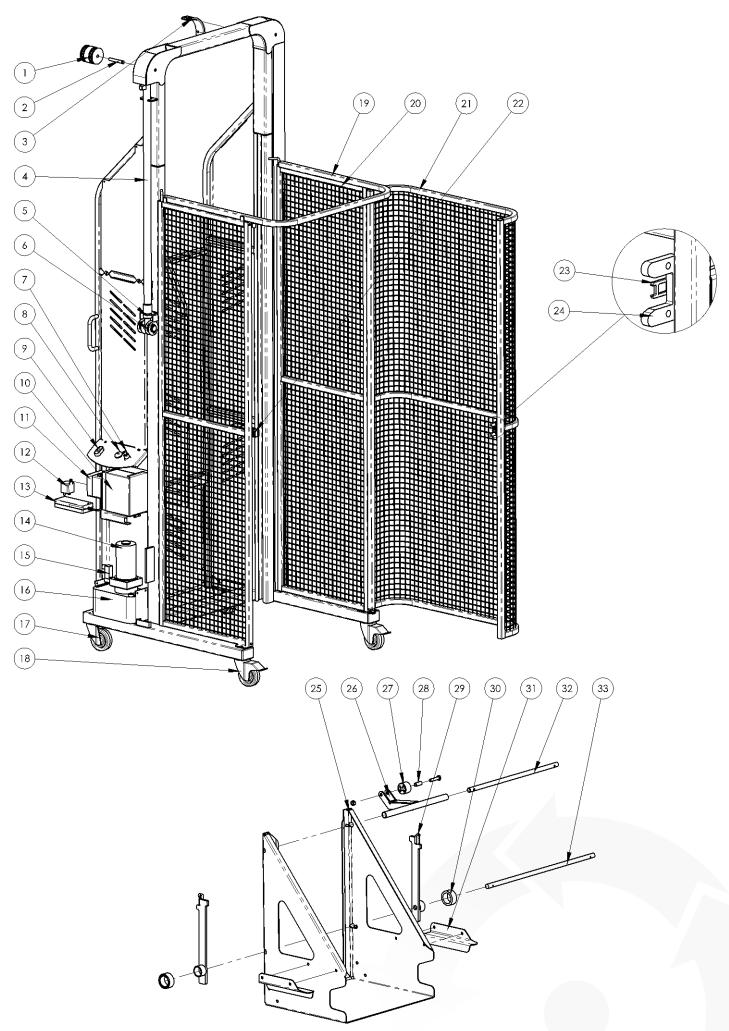
Date	Service Person	Location	Checks complete	Notes on repairs or maintenance required	Parts and materials used

8 Spare Parts

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

A full list of parts is available on request from Simpro, or may be viewed on our support website here: https://simpro.world/bin-lifters/dumpmaster/spare-parts.

Diagram Ref	Part Number	Description
1	640200064	Top Roller
2	140110003	SS304 axle for top roller
3	140120004	Top moulded chain guide
4	330090003	Complete Hydraulic Ram for DM1200, DM1500, DM1800
5	090090006	Ram Seal
6	140120002	Ram-End Rollers
7	790050003	Rotary Key Switch
8	0790050067	12/24v voltmeter blue display
9	790050007	Up/Down Switch
10	250050009	21 Ah 12v Battery
11	0210050002	Isolating switch
12	0790050040	Relay, 24vdc 120A
13	0390050006	Black 24v 6A Charger
14	0880050023	Motor, 24vdc 800W
15	0250090067	24vdc lowering valve coil
16	0940090001	Powerpack, 24VDC Steel tank
17	0250040072	Castor, 100mm Resilex no brake
18	250040076	Castor, 100mm Resilex with Total Brake
19	0140020088	U-bar Standard complete
20	0760040041	Full cage Mesh Side Guard (pairs) wwith Bungs
21	0140020270	Standard Mesh Door (curved) with Bungs
22	0790050245	IDEC Solenoid Door Lock, 24vdc, Power to Release
23	0250050065	Rubber-cushioned actuator for Idec Lock
24	0760120050	Idec Lock mounting bracket
25	0400020015	Cradle Pressing
26	0640200005	Standard Roller arm
27	0090120000	Follower Rollers 50mm x 35
28	0140120000	Bush for Follower Roller 12x16x36
29	0640200057	Sliding Plate for Dumpmaster
30	0140120007	DM Mast Rollers
31	0400020169	Pair of bin catch plates for 240 cradle
32	0400200000	Standard DM Top Roller Arm Axle
33	0000000002	Standard DM Main axle



9 Warranty

9.1 Definitions:

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

9.2 Coverage

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

9.3 Exclusions

- 1. Simpro will not recognise a Warranty Claim against a machine where payment to Simpro for that machine is outstanding. If a Warranty Claim is made before payment is due, the full payment must be made on the due date. The Warranty Claim, if accepted, will be credited at a later date.
- 2. Warranty Claims may not be recognized unless the <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: http://support.simpro.world.
- 2. If the fault is not able to be remedied, the End User should contact the Agent who sold the machine, and explain as fully as possible the fault, including all relevant factors such as:-
 - 1. Did the fault occur suddenly or has it been giving trouble over some time?
 - 2. Was the machine being used at the time?
 - 3. Is the fault intermittent?
 - 4. Are the batteries fully charged?
 - If repair is urgent, and the Agent cannot be contacted, the End User may contact Simpro direct.

9.5 Agent Claim Handling Procedure

- 1. Upon receiving notification of a fault, the Service Agent should attempt to determine the cause and a course of action before going to see the machine.
- 2. The Service Agent should contact Simpro for assistance in identifying the fault, if it is not apparent. This step is important, so that if a site visit is necessary, the correct tools and spare Parts can be taken. It is also important to establish whether there may have been any negligence, misuse or an accident that contributed to or caused the fault.
- 3. Parts requiring replacement will be supplied by Simpro free of charge; in some cases, it may be necessary to source Parts locally if needed urgently, but Simpro must authorize this if the cost of the item exceeds \$50.00 and is to be charged to Simpro.
- 4. If the fault is not a Minor Fault, the Agent must notify Simpro and receive authorization to proceed before the repair work is done. Simpro will assist in every way possible, including discussing the problem directly with the End User if necessary to determine the best method of effecting the repair, in the shortest time possible.
- 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.
- Simpro undertakes to be reasonable in respect of all Warranty repairs undertaken by Agents, but reserves the right to decline payment for:-
 - 1. Work done or materials replaced that were not authorized in advance by Simpro.
 - 2. Work not done to an acceptable standard.
 - 3. Work taking an unduly long time, due (in part or in full) to the lack of knowledge or skill of the serviceman or the Agent. The time allowed for repair work will be based on Simpro's assessment of what a reasonably skilled tradesman would take. Full Service Manuals are available on request at any time from Simpro and all service visits should be conducted with a Service Manual at hand.
- 7. dealer who supplied the machine. No claims will be recognised unless authorisation is obtained from the manufacturer before any repairs are done.

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

10 EC Declaration of Conformity



DECLARATION OF CONFORMITY

ORIGINAL

Business Name and Full Address of Manufacturer

Simpro Handling Equipment Ltd 66 Rangi Road, Takanini 2105 Auckland, New Zealand

Name and Address of Authorised Representative

As above

Name and Address of the Person in Community Authorised to compile the Technical File (if different to above)

Safe Machine Limited DBH Business Centre, Coxwold Way, Billingham, Tees Valley TS23 4EA UK

Description of product (Commercial Name)

Dumpmaster

Function, Model, Type, Serial Number

Function: Bin Tipper Type:

Model: Dumpmaster

Serial No:

Standards Used

EN 349 1993, EN 574 1996+A1:200, EN 953 1997, EN ISO 4413 2010, EN ISO 12100 2010, EN ISO13849-1 2006, EN ISO 13857 2008, EN 60204 2006+A1 2009, EN61000-6-2 2005, EN61000-6-4 2007

Place of Declaration

66 Rangi Road, Takanini 2105 Auckland, New Zealand

Date of Declaration:

24 February 2018

Declaration

I declare that the machinery fulfils all the relevant provisions of the following Directives:-Machinery Directive 2006/42/EC, Electromagnetic Compatibility Directive 2004/108/EC.

Person Empowered to Draw Up Declaration

Name: Daniel Craig Currie

Position: Business Development Manager

Signature:

Declaration No: 003





11 Notes

Simpro has been inventing, perfecting and manufacturing materials handling solutions for over thirty years. From humble beginnings as a small engineering firm in Auckland, New Zealand, the company has grown to become a leading supplier of handling equipment for niche applications – such as bin lifting, tipping and handling equipment, pallet trucks and materials handling elevators.

Simpro products play an unobtrusive but essential role for thousands of companies around the world, in industries as diverse as waste

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 Takanini 2105

 Auckland, New Zealand
- PO Box 202236
 Southgate, Takanini 2246
 Auckland, New Zealand

management, food processing, resource extraction and pharmaceutical manufacturing. They are available through a network of agents which spans the globe, and are backed by a sophisticated in-house design and fabrication capability.

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

The products in this catalogue contain intellectual property, including design elements registered to or licensed by Simpro Handling Equipment Ltd.

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- simpro.world/youtube

