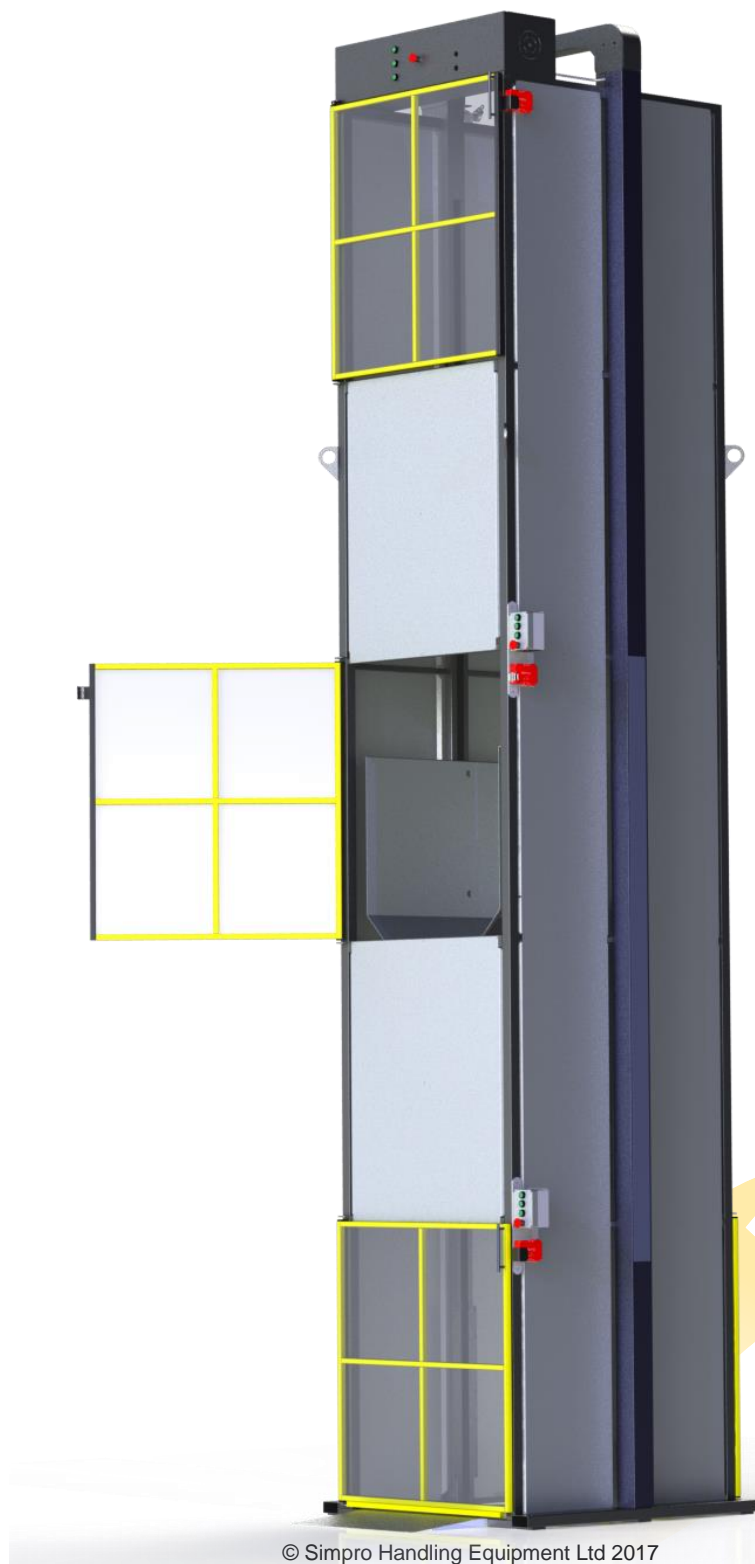


USER MANUAL

Hylifta™ Materials Handling Elevator



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For reasons 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:

📌 Text in GREEN indicates a point of interest.

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

Any errors in this document should be reported by email to info@simpro.world

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2 Introduction

Congratulations on your purchase of a Hylifta Materials Handling Elevator machine from Simpro. The Hylifta is an efficient and versatile solution for moving product between floor levels, designed to 'bridge the gap' between using a fork hoist, and installing an expensive passenger or goods lift.

Hylifta elevators are custom-built to each specific application, and access stations may be at the front and/or rear of the lift, at any level up to ten metres. Various models are available with safe working loads of up to 600kg, and platform sizes up to 1500mm x 1500mm.

Like all Simpro products, Hylifta elevators are designed to be maintenance-free and extremely reliable. They can transform your production workflow, saving valuable time and effort while reducing workplace injuries.

 **The Hylifta is not designed or certified for use as a passenger lift. Never attempt to use the Hylifta to lift persons or animals.**

2.1 Key features

Key features of the Hylifta include:

1. A reliable, virtually maintenance-free design.
2. Hydraulic operation which provides smooth, fast lifting and lowering.
3. Weight capacities of 250kg or 600kg, depending on model.
4. A versatile design which can be modified to suit a wide range of applications.
5. A safety-rated electronic control system, allowing custom operational logic.
6. A certified door safety interlock system, allowing multiple access stations on either or both sides of the elevator.
7. A hot-dip galvanised frame and platform, with Colorsteel cladding. Full or partial stainless-steel construction is also available.

2.2 Construction

The Hylifta consists of a steel frame with two vertical masts and Colorsteel cladding, a lift platform or cage, multiple access stations each with a safety door and control panel, one or two hydraulic rams, hydraulic powerpack and electronic control systems.

2.3 Mechanism

When operated, the lift platform or cage moves vertically within the lift to the desired access station. One or two hydraulic rams provide the force to lift the platform; it is lowered using gravity alone. The rams are powered by a hydraulic power pack, usually with a 3-phase motor. Electrical, hydraulic, and / or mechanical control mechanisms allow the operator to send and call the platform to any access station in a safe, efficient manner.

2.4 Assembly

The Hylifta is usually delivered fully assembled.

2.5 Environmental restrictions

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

1. Height above sea level not more than 1000m;
2. Ambient temperature not higher than +40°C and not lower than -10°C;
3. At ambient temperatures above 35°C, the relative humidity should not exceed 50%; at lower temperatures, higher relative humidity is permitted;
4. Do not use in flammable, explosive, corrosive, acidic or alkaline environments.








2.6 Intended operational life

The intended operational life of the Hylifta is as follows:

 One cycle is defined as a load placed into the Hylifta at ground level, raised to the highest level, then lowered again to ground level.

Average Gross Load Weight	Operational life (250kg Hylifta)	Operational life (600kg Hylifta)
< 100kg	200,000 cycles	300,000 cycles
100kg – 200kg	150,000 cycles	300,000 cycles
200kg – 250kg	100,000 cycles	200,000 cycles
250kg – 400kg	-	150,000 cycles
400kg – 600kg	-	100,000 cycles
> 600kg	-	-

2.7 Important notes

-  This user manual describes approved procedures for the operation, maintenance, and routine inspection of the Hylifta materials handling elevator.
-  All operators must carefully read and understand this manual before using the machine.
-  The user manual shall be kept by the operator, and shall be read by the operator until the operator is proficient with all aspects of standard use.
-  If the machine is to be leased, then the user manual shall accompany the machine.
-  This is a common manual. We reserve the right to modify the design of the 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.
-  Please contact your authorized Simpro agent if you encounter any problems.

3 Safety

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

- ⚠ A comprehensive Hazard and Risk Assessment must be undertaken before the Hylifta is used for the first time, as described in [Section 3.3](#).
- ⚠ The Hylifta is not designed or certified for use as a passenger lift. Never attempt to use the Hylifta to lift persons or animals.

3.1 Safety features

The safety features of the Hylifta are as follows:

1. Colorsteel cladding and safety doors prevent personnel access to all moving parts.
2. A safety interlock system which disables the machine unless all access doors are shut, and electrically locks the access doors while the machine is in operation.
3. A pressure-compensating lowering valve which automatically regulates the lowering speed regardless of the weight of the load.
4. A hose-burst valve which locks the platform in place in the event of a failure in the hydraulic system.
5. Emergency Stop buttons which immediately shut down the machine when pressed.

3.2 Reasonably foreseeable misuse

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

1. Use of the machine by untrained operators;
2. Loading materials into the lift that the platform is not specifically designed to hold;
3. Exceeding the Safe Working Load;
4. Attempts to bypass door interlock or other safety systems;
5. Attempts to clear materials from beneath the platform without following proper procedures;
6. Attempts to clean the machine without following proper procedures.

3.3 Hazard and Risk Assessment Guide

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 intended to be a comprehensive Hazard and Risk Assessment, but an analysis of the most common risk factors associated with the Hylifta load elevator.

As with all powered industrial equipment, some hazards remain, and it is essential that all operators are aware of these hazards and what they must do to prevent harm to themselves or to others, as described in [Section 3.3.4](#).

3.3.1 Risk Factor Calculation

As defined in safety standards, the 'Risk Factor' associated with any given hazard may be calculated from the following table, using the formula:

$$\text{Risk Factor} = \text{LO} \times \text{FE} \times \text{DPH} \times \text{NP}$$

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						

3.3.2 Risk Factor Evaluation

Once a Risk Factor has been calculated, it may 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

3.3.3 Identified Hazards

The following common hazards have been identified with the Hylifta design. For each hazard, a full Risk Factor analysis has been completed, and suitable control measures described.

⚠ Note that other hazards may be present, depending on the particular circumstances of use. It is the responsibility of the machine owner to identify, evaluate and mitigate such hazards.

Entanglement or amputation of fingers or limbs in moving parts										
Operators	LO:	0.5	FE:	1	DPH:	4	NP:	1	Risk Factor:	2
	Guarding prevents access to all moving parts and trapping hazards.									
Other persons	LO:	0.5	FE:	1	DPH:	4	NP:	1	Risk Factor:	2
	As above.									
Control measures	Operators are responsible to obey warning signs fitted to the machine and instructions regarding keeping clear of all moving parts.									
Comments	The Hylifta is designed so that trapping hazards are eliminated, minimized or isolated.									
Crushing by unauthorized rapid descent of platform										
Operators	LO:	0.5	FE:	1	DPH:	4	NP:	1	Risk Factor:	2
	Operators are isolated from the platform by the frame, cladding and access doors during operation. A door safety interlock ensures that access doors can only be opened when the platform is locked in place, and the platform cannot be moved unless all access doors are closed and locked. A hose-burst valve ensures the platform is locked in the event of a failure of any hydraulic components.									
	Significant safety margins ensure that the probability of failure of any steel, hydraulic, or control parts failing is very low.									
Other persons	LO:	0.5	FE:	0.5	DPH:	4	NP:	1	Risk Factor:	1
	As above.									
Control measures	Operators are responsible to obey warning signs fitted to the machine and instructions regarding keeping away from the area under the platform when raised. The machine must be maintained and all faults repaired immediately.									
Comments	A hydraulic speed-control valve limits the maximum speed of descent in normal use.									
Crushing if the machine falls over										
Operators	LO:	1	FE:	1	DPH:	15	NP:	1	Risk Factor:	15
	Low risk as Hylifta elevators are very stable and are usually bolted into place.									
Other persons	LO:	1	FE:	1	DPH:	15	NP:	4	Risk Factor:	60
	As above.									
Control measures	Never install or operate the Hylifta on sloping ground. Never attempt to lift more than the machine’s rated capacity.									
Comments										
Electrocution or electric shock										
Operators	LO:	1	FE:	2	DPH:	15	NP:	1	Risk Factor:	30
	Some risk is always present with mains leads.									
Other persons	LO:	1	FE:	1	DPH:	15	NP:	1	Risk Factor:	15
	As above.									
Control measures	Fit a Residual Current Device (RCD) to all power sockets. Check all leads frequently and repair or replace if damaged. All leads should be checked and tagged by a registered electrician at regular intervals.									
Comments	Mains-powered machines are earthed and comply with AS60204.1.									
Damage to skin when used in extreme weather conditions										
Operators	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2
	If a Hylifta must be used in extreme cold or heat, the operator should wear gloves and other protective clothing.									
Other	LO:	0.5	FE:	4	DPH:	1	NP:	1	Risk Factor:	2

persons	As above.							
Control measures	The operator must wear appropriate protective equipment.							
Comments	See Section 2.5 for Hylifta environmental restrictions.							
USER HAZARD:								
Operators	LO:		FE:		DPH:		NP:	Risk Factor:
Other persons	LO:		FE:		DPH:		NP:	Risk Factor:
Control measures								
Comments								
USER HAZARD:								
Operators	LO:		FE:		DPH:		NP:	Risk Factor:
Other persons	LO:		FE:		DPH:		NP:	Risk Factor:
Control measures								
Comments								
USER HAZARD:								
Operators	LO:		FE:		DPH:		NP:	Risk Factor:
Other persons	LO:		FE:		DPH:		NP:	Risk Factor:
Control measures								
Comments								
USER HAZARD								
Operators	LO:		FE:		DPH:		NP:	Risk Factor:
Other persons	LO:		FE:		DPH:		NP:	Risk Factor:
Control measures								
Comments								

3.3.4 Residual Hazards

Some hazards may be present despite any the safety measures implemented by the manufacturer.

It is the responsibility of the owner and the operators to identify and evaluate any such hazards, and to put in place procedures to ensure the safety of all persons near the machine. These steps may include any or all of the following:

- ⚠ Training of operators.
- ⚠ Testing and recording that operators are properly trained.
- ⚠ Implementing Standard Operating Procedures and ensuring they are followed.
- ⚠ Posting additional signage, floor marking, or other warnings as deemed appropriate.

3.4 Recommended Precautions

The following precautions must be taken for the safe use of a Hylifta materials handling elevator.

Only trained and authorised persons should be permitted to use the machine.

Operators must read and obey the instructions displayed on the machine.

Never attempt to lift persons or animals.

Never attempt to lift unstable items, hazardous materials, or liquids, unless the lift was specifically designed for that application.

Never operate the machine with any covers or guards removed.

Never attempt to lift items with a total gross weight heavier than the machine's rated capacity.

Never install or operate the machine on a sloping or uneven surface.

Never install or operate the machine on the edge of a raised platform, unless specifically designed for that application.

All persons other than the operator should keep clear while the machine is in use.

Never place foreign objects or body parts beneath the platform, guarding or access doors.

Before connecting machine to mains supply, ensure voltage and frequency correspond with that listed on the rating plate.

Do not use an extension lead to connect machine to the mains supply.



Do not operate if power supply lead and insulation is damaged.

Do not connect a damp power plug or socket.

Ensure the 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.

4 Operating Instructions

-  Failure to follow the instructions, bypassing safety functions, exceeding the safe working load, or deliberate misuse may result in serious injury or death.
-  The Hylifta is not designed or certified for use as a passenger lift. Never attempt to use the Hylifta to lift persons or animals.




4.1 Operation from lower level

1. Press the Lower button. If the platform is at the upper level, it will come down to the lower level and the door will automatically unlock for 15 seconds. If the platform is already at the bottom, pressing the Lower button unlocks the door.
2. Open the door; note that you may have to pull down slightly before lifting, to release the catch.
3. Place product on, or remove product from the platform as appropriate.
4. Close the door; it will automatically lock straight away.
5. Press the blue Reset button for between 1 and 3 seconds, until the light turns off.
6. Press the Raise button. The platform will automatically raise to the upper level, the upper door will unlock for 15 seconds, and the Reset lamp should turn on.

4.2 Operation from upper level

1. Press the Raise button. If the platform is at the lower level, it will come up to the top level and the door will automatically unlock for 15 seconds. If the platform is already at the top, pressing the Raise button unlocks the door.
2. Open the door; note that you may have to pull down slightly before lifting, to release the catch.
3. Place product on, or remove product from the platform as appropriate.
4. Close the door; it will automatically lock straight away.
5. Press the blue Reset button for between 1 and 3 seconds, until the light turns off.
6. Press the Lower button briefly. The platform will automatically descend to the lower level, the lower door will unlock for 15 seconds, and the Reset lamp should turn on.

4.3 Notes on resetting the Safety System

-  The platform cannot move up or down unless the blue Reset lamp is off. The Reset lamp will only turn off when pressed if all access doors are closed and locked, and all Emergency Stops are 'out'.
-  The Safety System checks all electric components continuously, and if any faults are detected it cannot be reset.
-  There are two types Safety Systems fault – Recoverable, and Non-recoverable. Most recoverable faults can be remedied by turning the main isolator switch off, waiting for 10 seconds, then turning it on again. Non-recoverable faults require investigation by a service technician.

5 Maintenance Procedures

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

- ⚠ Contact your Simpro agent if repair or service work is required.
- ⚠ All repair and service work must be carried out by qualified authorized personnel.
- ⚠ Replacement parts must be supplied by Simpro or an authorized Simpro agent, and must be of the same design and specification as the original parts.
- ⚠ Replacement hydraulic fluid must comply with specifications in [Section 5.5.5](#).

5.1 Quick Troubleshooting Guide

Please refer to the Quick Trouble Shooting Guide below before contacting your agent for service.

Problem	Possible Causes	Remedy
The platform will not lift, and the motor does not run	Blown fuse, faulty plug, or faulty power lead	Check and rectify
	Faulty switch or wiring	Check and rectify
	Fault on motor starter	The motor starter is electronic and may enter a fault mode if a problem is detected. Pressing the Reset button on the control panel may resolve the problem; if not, a service technician will need to check the starter unit.
	Motor running wrong direction (3-phase only)	Swap phase wires in plug
	Interlock switch on door not working	Contact your agent for details and / or wiring diagrams
The platform will not lift, although the motor runs	Load too heavy	Reduce load weight
	Pressure-relief valve set too low	Contact your agent
Platform will not lower	Platform sticking in masts	Spray inside of masts with silicone lubricant.
	Lift ram jamming	Contact your agent
	Faulty switch, wiring, or lowering valve	The lowering valve should click when the lower button is pressed – if not, check the switch, wiring and electro-magnetic coil
The door does not unlock when the platform is at a station	Wiring fault	Check and rectify
	Fault with safety relay or sensors	The safety controller needs to receive a signal from both level sensors within a very small time span. If one level sensor has moved out of position, the controller may not allow the door to unlock.
Reset lamp does not turn off when button is pressed	Access door(s) not fully closed	Ensure all doors are fully closed and locked
	Emergency Stop engaged	Check that all Emergency Stops are released, and the contact blocks are in place.
	Safety Relay is in 'Safe Mode'	Turn the main Isolating Switch off, wait for 10 seconds then turn on again. If the lamp will still not go Off, call a service technician.

5.2 Cleaning

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




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

5.2.1 Ingress protection

Item	Ingress Protection
Push buttons	IP66
Switches	IP66
Lamps	IP66
Door lock	IP66
Coded magnetic switch	IP66
Motor	IP54 (additional protection provided by covers)
Overall	IP55 (available options: IP56, IP69K)

5.3 Platform jams


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

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

5.3.1 Platform jams while raising

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

1. Attempt to visually identify the cause or problem.
2. Lower the platform to ground level if possible
3. Open the door, remove the load, and rectify the problem.

 **If the load is too heavy, or if the pressure-relief valve is set too low, the platform 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 Platform jams while lowering

If the platform 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.


Hydraulic or electrical 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:
 - a. If a hose or fitting has burst or come loose, correct this issue.
 - b. Raise the platform slightly to reset the hose-burst valve.
 - c. The platform 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 platform to the ground:

- a. Open the lid on the power-pack box at the top
- b. Slowly turn the handle on the ball valve, until the platform starts going down.
- c. Close the ball valve again when the platform reaches the lowest level.
- d. Repair the hydraulic or electrical fault.

Mechanical fault:

1. Manually release the upper access door interlock as described in [Section 5.7.1](#) and open the door.
2. Carefully attach lifting chains or strops to the platform, and use a suitable hoist or lifting device to take the weight of the platform.
3. If possible, manually remove the load.

 **Never climb onto the platform, or place any part of your body beneath the platform, unless it is securely supported.**

4. Attempt to identify the cause of the jamming. The most likely causes are:
 - a. The lifting chain may have derailed from the plastic guide at the top of the mast, on the side opposite the lift ram.
 - b. A mast may have been bent or damaged, jamming one of the mast rollers.
 - c. Lack of lubrication inside the masts.
 - d. The platform may be sitting out of level, due to poor adjustment of the lifting chains or to a breakage.
5. Once the problem has been identified, correct it and lower the platform to the ground.
6. Run the machine through several full cycles with no load to ensure the problem has been properly resolved. Then test with a full load.
7. If there are no further problems, the machine may be returned to service.

5.4 Hydraulic system

- ⚠ Spare parts are available from Simpro or any Simpro agent.
- ⚠ Refer to [Section 5.4.6](#) and [Section 5.4.7](#) for schematic diagrams of the hydraulic system.

5.4.1 Powerpack

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

5.4.2 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 platform).

5.4.3 Lift Rams

The lift rams are 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. A Hose-burst valve is fitted directly to one (or both) ram ports.

5.4.4 Maintenance

As the pump only runs while the platform is lifting, it can take at least 500 loads 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.

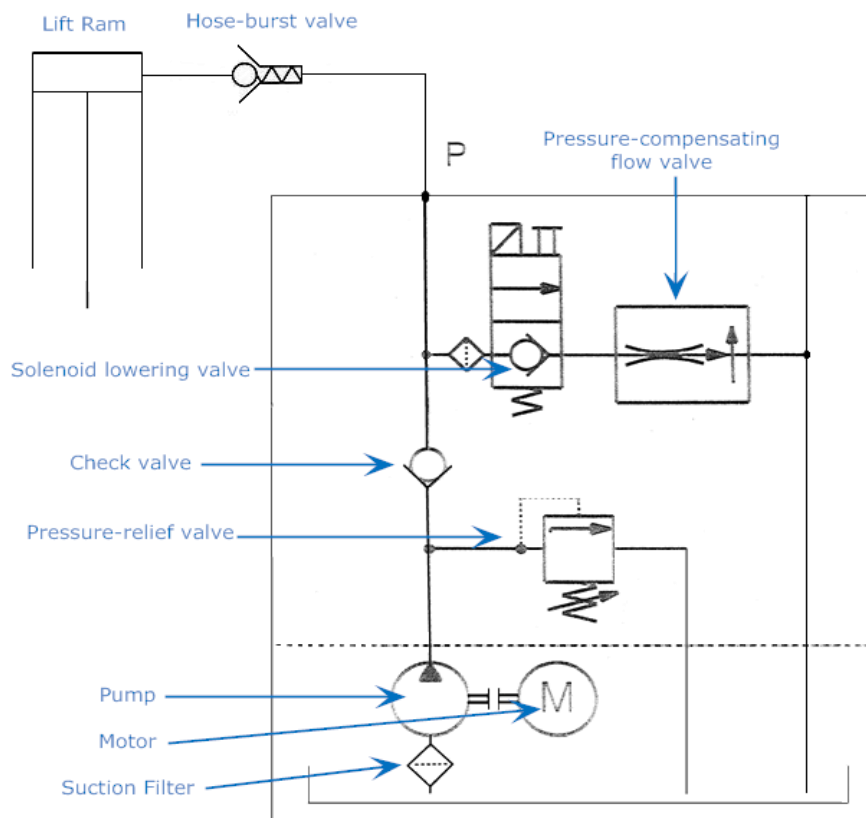
5.4.5 Hydraulic fluid

Any good-quality mineral oil-based hydraulic fluid can be used. Fluid with a Viscosity Grade of 22 (ISO VG 22) is recommended; fluid with a Viscosity Grade of 32 (ISO VG 32) may be used, but will reduce the lowering speed slightly.

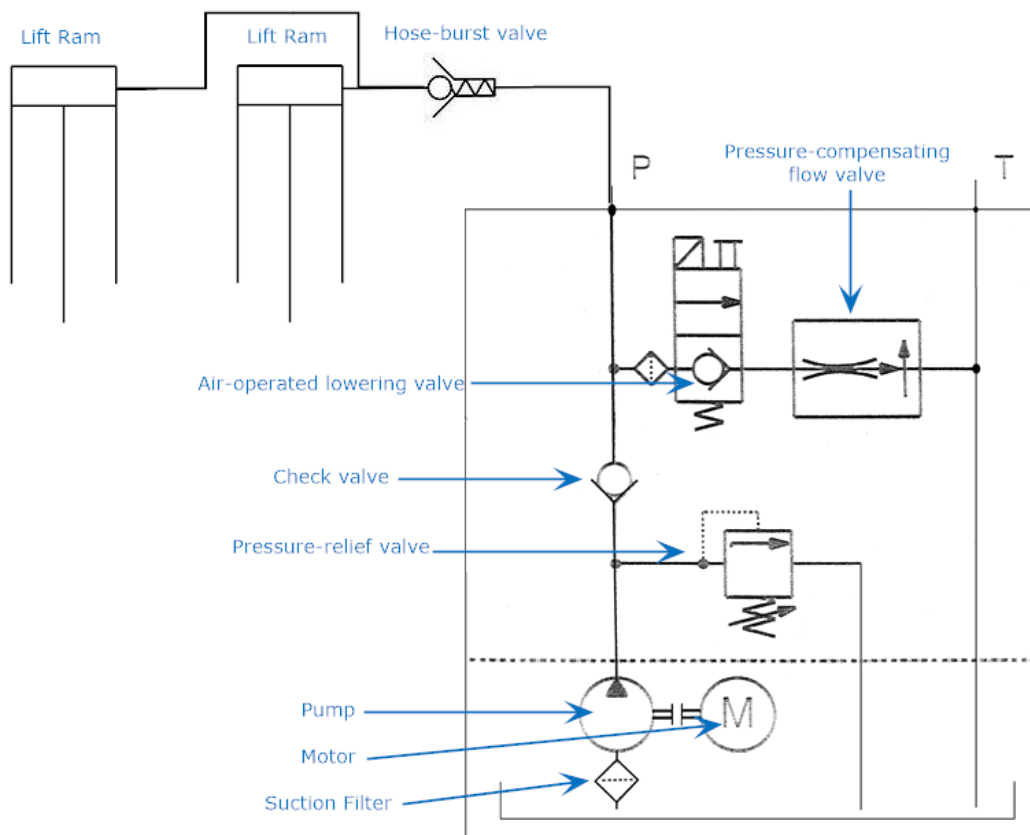
The fluid should have physical lubricating and chemical properties as specified by:

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

5.4.6 Hydraulic system schematic (250kg capacity)



5.4.7 Hydraulic system schematic (600kg capacity)



5.5 Access Doors

5.5.1 Side-hinge access doors

The standard Hylifta access doors are a side-hinge type, consisting of a steel frame with transparent PET-G guard panel. 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 all fixings are tight.
3. Check the door safety interlock to ensure it works as intended. There are two things to check:
 - a. Firstly, raise the lift platform a little off the ground and try to open each access door. If any door can be opened, immediately take the machine out of service and contact your agent for instructions.
 - b. Next, open each access door in turn, and press the Raise and Lower buttons to make sure the machine does not run. If it can be operated while a door is open, immediately take the machine out of service and contact your agent for instructions.

5.5.2 Roller access doors

Some Hyliftas are fitted with roller access doors. These are lifted vertically, rolling up into a container fitted above the door. They take up very little space, but will benefit from occasional servicing as follows:

1. Lightly lubricate the roller door tracks with silicone spray.
2. Check that all fixings are tight.
3. Check the door safety interlock to ensure it works as intended. There are two things to check:
 - a. Firstly, raise the lift platform a little off the ground and try to open each access door. If any door can be opened, immediately take the machine out of service and contact your agent for instructions.
 - b. Next, open each access door in turn, and press the Raise and Lower buttons to make sure the machine does not run. If it can be operated while a door is open, immediately take the machine out of service and contact your agent for instructions.

5.5.3 Swing-up access doors

Some Hyliftas are fitted with swing-up access doors. These are supported by gas struts and take up a minimum of space, but have 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. Ensure the retainer caps on the arm pivot bars are in place, and that all fixings are tight.
3. 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.
4. Check the door safety interlock to ensure it works as intended. There are two things to check:
 - a. Firstly, raise the lift platform a little off the ground and try to open each access door. If any door can be opened, immediately take the machine out of service and contact your agent for instructions.
 - b. Next, open each access door in turn, and press the Raise and Lower buttons to make sure the machine does not run. If it can be operated while a door is open, immediately take the machine out of service and contact your agent for instructions.

5.6 Access Door Safety Interlocks

All access doors on the Hylifta are fitted with one or two solenoid-operated safety door interlocks, typically Idec model HS5E-F4403-G. These are 'power-to-unlock' type, with internal contacts which are used to determine whether the door is closed and locked.

A full copy of the user manual for the Idec safety interlocks may be downloaded from goo.gl/iafPol.

 A summary of the specifications is included below.

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 solenoid.
- 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 maintenance.

Solenoid Lock Type

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

Ratings

• **Contact Ratings**

Rated Insulation Voltage (Ui) (Note 1)		250V (between LED or solenoid and ground: 30V)		
Rated Thermal Current (Ith)		2.5A		
Rated Voltage (Ue)		30V	125V	250V
Rated Current (Ie) (Note 2)	AC	Resistive load (AC-12)	—	2A
		Inductive Load (AC-15)	—	1A
	DC	Resistive load (DC-12)	2A	0.4A
		Inductive Load (DC-13)	1A	0.22A

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

Note 1: UL rating: 125V

Note 2: TÜV, 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	286 mA (initial value)	
Coil Resistance	90Ω (at 20°C)	
Pickup Voltage	Rated voltage × 85% maximum (at 20°C)	
Dropout Voltage	Rated voltage × 10% minimum (at 20°C)	
Maximum Continuous Applicable Voltage	Rated voltage × 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 EN60947-5-1 (TÜV approval) EN1088 (TÜV approval) GS-ET-19 (BG approval) UL508 (UL recognized) CSA C22.2, No. 14 (c-UL recognized)
Operating Temperature	IEC60204-1/EN60204-1 (applicable standards for use)
Relative Humidity	–25 to 50°C (no freezing)
Storage Temperature	45 to 85% (no condensation)
Pollution Degree	–40 to +80°C (no freezing)
Impulse Withstand Voltage	3
Insulation Resistance (500V DC megger)	2.5 kV (between LED, solenoid and grounding: 0.5 kV)
Electric Shock Protection	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
Degree of Protection	Class II (IEC61140)
Shock Resistance	IP67 (IEC60529)
Vibration Resistance	Operating extremes: 100 m/s ² Damage limits: 1000 m/s ²
Actuator Operating Speed	Operating extremes: 10 to 55 Hz, amplitude 0.35 mm minimum Damage limits: 30 Hz, amplitude 1.5 mm minimum
Direct Opening Travel	0.05 to 1.0 m/s
Direct Opening Force	Actuator HS5Z-A51: 11 mm minimum Actuator HS5Z-A51A/AS2/A52A/A53A/55: 12 mm minimum
Tensile Strength when Locked	80N minimum
Operating Frequency	1000N minimum (GS-ET-19)
Mechanical Life	900 operations per hour
Electrical Life	1,000,000 operations minimum (GS-ET-19)
Conditional Short-circuit Current	100,000 operations minimum (operating frequency 900 operations per hour, load AC-12, 250V, 1A)
Cable	50A (250V) (Use 250V/10A fast acting type fuse for short-circuit protection.)
Cable Diameter	UL2464, No. 21 AWG (8-core: 0.5 mm ² or equivalent/core)
Weight (approx.)	ø7.6 mm
	400g (HS5E-***01)



5.6.1 Manual override

If required, the safety door interlocks can be manually disabled by the following procedure.

1. Insert the yellow Manual Unlock Key into the triangular cam on the lock.
2. Turn key fully to the Unlock position.
3. The Safety System goes into 'Safe Mode' as soon as any interlock is manually disabled, and cannot be reset until all interlocks are re-enabled.
4. If any work must be done on the platform, or if it needs to be raised off the ground for cleaning, it must be moved into position before the door interlocks are disabled. The platform cannot be moved while any door interlocks are disabled.



- ⚠ Do not use the safety switch with the key not fully turned (less than 90°) as this may cause damage to the switch or operation failures (when manually unlocked, the switch will keep the main circuit disconnected and the door unlocked).
- ⚠ Do not apply excessive force to the manual unlock components, otherwise the manual unlock part will become damaged.
- ⚠ Never leave the Manual Unlock Key attached to the switch during operation. The key should be kept in a safe place only accessible to authorised staff or service technicians.

5.7 'Raised-platform' maintenance

All maintenance work on the Hylifta should be conducted with the platform in the lowered position. If the platform needs to be raised during maintenance, or if an access door needs to be opened while the platform is raised, observe the following procedure:

- ⚠ This work should only be carried out by an authorised technician.
1. Raise the platform to the desired position.
 2. Turn the mains power isolator switch to 'Off'.
 3. Manually disable the access door interlock(s) as described in [Section 5.7.1](#).
 4. Open the access door and proceed with maintenance or cleaning.
 5. When finished, close the access door and re-enable the interlock(s).
 6. Test the machine operation and safety functions before returning to service

6 Safety Relay

6.1 Overview

The Hylifta is fitted with a Rockwell CR-30 Safety Relay, which continuously monitors the status of the Emergency Stop contacts, access door interlocks, platform-position sensors, and other safety equipment. The Relay goes into 'Safe Mode':

1. Whenever a fault is detected;
2. Whenever an access door is unlocked or opened;
3. Whenever an Emergency Stop button is pressed.

Whenever the Relay is in 'Safe Mode' the blue Reset lamp glows, and the system must be reset before the machine can be operated. To reset the system:

1. Ensure all access doors are correctly closed and locked
2. Ensure all Emergency Stops are released
3. Press and hold the Reset button for 1 - 3 seconds, then release – the blue 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 cannot be reset.

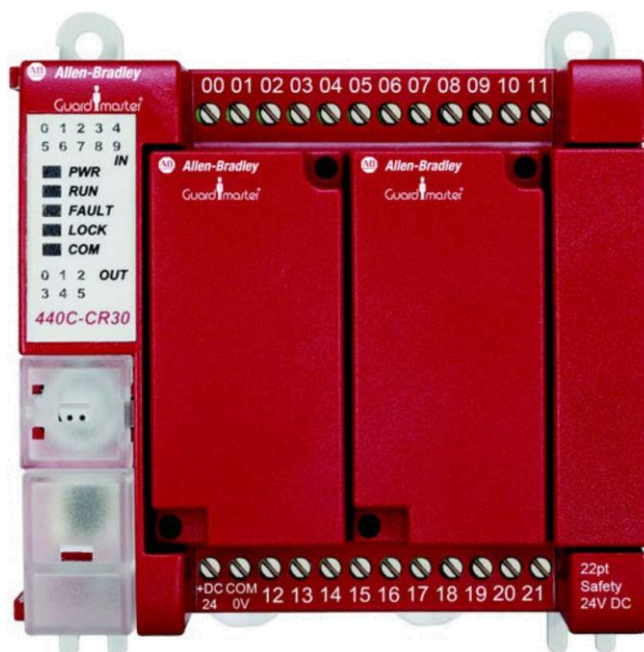
This documentation is to assist an engineer or electrician to find and repair any fault preventing the system from resetting. Most faults can be traced from the LEDs on the CR30 safety relay itself; some locks and sensors also have LEDs to assist in trouble-shooting.

6.2 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.

6.2.1 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

6.2.2 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 [this link](#). 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.



7 Handling, transportation and storage

7.1 Moving

If the Hylifta is fitted with castor wheels, it may be easily moved by hand while standing upright. The lift platform should be just off the ground when moving the machine.

 **Extreme care should be taken when moving the Hylifta on sloping ground.**

7.2 Lifting

Carry out the following procedure when lifting, loading or unloading the Hylifta:

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 or chain around the top 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 hold the machine steady and watch for obstructions.
4. Slowly lift, move and lower the machine into place, ensuring it remains fully upright at all times.

 **Standard machines weigh between 500kg and 1000kg.**

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

7.3 Transportation

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

1. Transport the machine lying in a horizontal position, on suitable dunnage and chocks
2. Securely tie the machine into place with strops rated for at least 1000kg.

 **Ensure the machine is fastened against lateral forces from any direction.**

7.4 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 procedure:

1. Clean the entire machine as described in [Section 5.2](#).
2. Carry out several lift/lower cycles, then lower the platform to the ground.
3. Lightly lubricate door hinges, lifting tracks and other exposed moving parts with silicone spray.
4. Turn the key switch (if fitted) and mains power isolator switch to 'Off'.



8 Warranty

8.1 Definitions:

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

8.2 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.

8.3 Exclusions

1. Simpro will not recognise a Warranty Claim against a machine where payment to Simpro for that machine is outstanding. If a Warranty Claim is made before payment is due, the full payment must be made on the due date. The Warranty Claim, if accepted, will be credited at a later date.
2. Warranty Claims may not be recognized unless the [Warranty Registration Process](#) has been completed. If not done at the time of sale, this should be done at the time of the Warranty Claim. If warranty registration has not been completed, proof of purchase may be required.
3. Damage caused or contributed to by misuse, abuse, accident, unauthorised repairs or modifications, or failure to use the machine in accordance with instructions is specifically excluded.
4. Travelling time and mileage are specifically excluded from the Simpro warranty coverage. However under certain circumstances Simpro at its discretion may contribute to these costs. Authorisation must be obtained from

Simpro prior to any such Warranty Claim. This does not prohibit an Agent offering more extensive Warranty cover, outside of this Warranty, as negotiated between the Agent and the End User.

8.4 End User Claim Procedure

1. Where a fault or breakdown appears to have occurred the End User should, if applicable, first consult the Troubleshooting Guide section of the Instruction Handbook 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: <https://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?
 5. If repair is urgent, and the Agent cannot be contacted, the End User may contact Simpro direct.

8.5 Agent Claim Handling Procedure

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

9 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)

Hylifta

Function, Model, Type, Serial Number

Function: Materials Handling Elevator
Type:

Model: Hylifta
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 July 2017

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: 005



10 Scheduled Inspections

It is recommended to conduct regular scheduled inspections of the Hylifta. 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 inspection procedures are described in the following pages, along with tables to record the results.

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

10.1 Pre-inspection checklist

1. Wear suitable Personal Protective Equipment, including safety boots and protective eyewear.
2. Ensure there are no ignition sources nearby.
3. Lower the platform and remove load.
4. Turn off the key switch (if fitted) and master isolator switch
5. Remove the powerpack cover.
6. Clean the powerpack and electric circuitry with compressed air. Never use water or chemicals.
7. Always use height safety equipment when servicing elevated areas.

10.2 Weekly inspection

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

Weekly Inspection Checklist			
Category	No.	Item	Check
General	1	Entire machine	Conduct a complete lift/lower cycle and check for any faults or abnormal behaviour.
Safety systems	2	Door interlock actuators	Check that all interlock actuators are securely attached to access doors with security screws. Check that lock bolts enter the actuators freely and smoothly, without force. Check that the access doors are locked while the lift platform is not in position.
Mechanical systems	3	Inside masts	If the lifting motion appears to be jerky or inconsistent, spray a small amount of silicone lubricant inside the mast tracks to minimise friction.

10.3 Monthly inspection

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

Monthly Inspection Checklist			
Category	No.	Item	Check
General	1	Entire machine	Conduct a complete lift/lower cycle and check for any faults or abnormal behaviour.
Hydraulic systems	2	Hydraulic ram	Check there are no oil leaks.
	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 interlock actuators	Check that all interlock actuators are securely attached to access doors with security screws. Check that lock bolts enter the actuators freely and smoothly, without force. Check that the access doors are locked while the lift platform is not in position.
Mechanical systems	6	Inside masts	Lightly lubricate with silicone spray.
	7	Door hinges	Lightly lubricate with silicone spray.
	8	Castor wheels (if fitted)	Check that the castor wheels are running smoothly and the brakes working correctly.

10.4 Annual inspection

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

Annual Inspection Checklist			
Category	No.	Item	Check
General	1	Entire machine	Conduct a complete lift/lower cycle and check for any faults or abnormal behaviour.
Hydraulic systems	2	Hydraulic ram	Check there are no oil leaks.
	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 interlock actuators	Check that all interlock actuators are securely attached to access doors with security screws. Check that lock bolts enter the actuators freely and smoothly, without force. Check that the access doors are locked while the lift platform is not in position.
Mechanical systems	6	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.
	7	Ram rollers	Lightly lubricate with silicone spray.
	8	Inside masts	Lightly lubricate with silicone spray.
	9	Door hinges	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





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uk 1603 389 049

MATERIALS HANDLING ELEVATOR

MODEL:	3340-8
SERIAL NUMBER:	5000
CLASSIFICATION:	G0009
MAXIMUM LOAD RATING:	500 kg
PLATFORM DIMENSIONS:	1100 mm x 1000 mm
LOWERED HEIGHT:	0 mm
RAISED HEIGHT:	3338 mm
VERTICAL TRAVEL:	3338 mm
MAX LIFTING SPEED:	4.0 m/sec
MAX LOWERING SPEED:	4.0 m/sec
POWER SUPPLY:	400 V 50 Hz
MOTOR POWER:	0.75 kW
MAX CURRENT DRAW:	1.4 A
CONTROL CIRCUIT:	24 volts

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