

## ***Material Lift Risk and Hazard Management***

Models	GH 3.8	Safe Working Load (kg)	136 kg	Maximum Lifting Height (m)	3.80 m		
	GH5.6		113 kg		5.60 m		
	LL		91 kg		1.70 m		
	GL-4		227 kg		1.80 m		
	GL-8		181 kg		3.06 m		
	GL-10		159 kg		3.56 m		
	GL-12		159 kg		4.20 m		
	SLC-12		295 kg		3.94 m		
	SLC-18		295 kg		5.64 m		
	SLC-24		295 kg		7.32 m		
	SLA-10		454 kg		3.49 m		
	SLA-15		363 kg		4.98 m		
	SLA-20		363 kg		6.46 m		
	SLA-25		295 kg		7.94 m		
	ST-20		363 kg		6.46 m		
	ST-25		295 kg		7.94 m		

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### **Introduction/Scope**

In accordance with the relevant Occupational Health and Safety Legislation for the region you are working in (reference to state legislation is listed below), this report serves as confirmation that each model type Genie lift, referenced above, has undergone a risk assessment and conforms to the applicable market standard (i.e. AS 1418.10). This risk assessment investigates the potential hazards associated with operation, maintenance, servicing, inspection, transportation and storage of the above referenced plants.

Our aim is to help ensure people at work (and any other personnel) are protected against health and safety risks associated with the use of the plant detailed within this report. Possible hazards and risks are to be assessed with respect to the use of the plant, on any jobsite, and control measures need to be incorporated, prior to the plants use, to maximise safety. For each identified risk, the designed control measures have been implemented to reduce these risks as far as practicable. Any residual risks, and their required control measures, can be found on the plants safety decals and in the operators, service and safety manuals.

Each model type receives a Plant Design Registration number as well as a Certificate of Test and Compliance, through a third party consulting firm, that confirms the conformity to the applicable standard. Both of these documents can be provided to the owner/user at their request.

In accordance with the listed legislation, the information required to be supplied to the Purchaser, or User, of the plant by the designer, manufacturer, supplier and importer can be found in the operators and service manuals.

The listed legislation provides information, for employees, employers, plant installers etc., regarding providing a safe working environment. To assist in this effort, Genie also provides both operators and service manuals for their products which provides information regarding residual risks and their control measures. In addition to these manuals there may be industry safe use standards for the products that can also be used to help with identifying potential hazards on the jobsite (e.g. AS 2550.10).

## Hazard Type Checklist

The table below provides a summary of some potential hazards associated with the use of the plant. Genie evaluates each of these potential hazards during the risk assessment process in an effort to select specific control measures, (e.g. designs, guarding, warnings) that will reduce the likelihood that the operator, platform occupants, maintenance personnel or bystanders will be exposed to the hazard.

Many of these hazards can be identified in the relevant States Plant Hazard Guidance document, and AS1418.10 Appendix A, which is the governing design standard for these plant.

<b>Table 1</b> <b>Hazard Type Checklist</b>	
CRUSHING, ENTANGLEMENT, CUTTING, SEVERING, STABBING, PUNCTURING, SHEARING, FRICTION, IMPACT, TRAPPING	<ul style="list-style-type: none"> <li>– Can anyone’s hair, clothing, gloves, cleaning apparatus or any other materials become entangled in moving parts, or objects in motion.</li> <li>– Can anyone be crushed due to:               <ul style="list-style-type: none"> <li>○ material falling from plant</li> <li>○ uncontrolled motion or unexpected movement of plant</li> <li>○ the plant tipping or rolling over</li> <li>○ inadequate slowing or stopping devices of plant to control movement</li> <li>○ support structure collapse</li> <li>○ coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair</li> <li>○ being trapped between the plant and materials or fixed structures</li> </ul> </li> <li>– Cutting, stabbing &amp; puncturing due to:               <ul style="list-style-type: none"> <li>○ contact with sharp or flying objects</li> <li>○ coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant</li> <li>○ parts of plant or worksite material disintegrating or falling</li> <li>○ movement of plant</li> <li>○ can anyone’s body parts be sheared between moving parts or surfaces of the plant</li> <li>○ can anyone be struck by moving objects due to uncontrolled or unexpected movement of plant or work pieces (i.e. failure of the control system)</li> </ul> </li> </ul>
ERGONOMIC, SLIPPING, TRIPPING, FALLING	<ul style="list-style-type: none"> <li>– Can anyone be injured due to:               <ul style="list-style-type: none"> <li>○ uneven or slippery work surfaces</li> <li>○ poor housekeeping in the vicinity of or in the plant</li> <li>○ obstacles being placed in the vicinity of the plant</li> <li>○ due to repetitive body movements</li> <li>○ constrained body posture or the need for excessive effort</li> <li>○ design inefficiency causing mental or psychological stress</li> <li>○ inadequate or poorly placed lighting of plant or workers IN THE WORKING AREA</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ lack of failsafe measures against human error or human behaviour</li> <li>○ mismatch of plant with natural human limitations</li> <li>○ unhealthy posture or excessive efforts</li> <li>○ lack of personal fall protective equipment</li> <li>○ inadequate design/positioning of controls</li> </ul>
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<b>Table 1</b> <b>Hazard Type Checklist</b>	
ELECTRICAL	<ul style="list-style-type: none"> <li>– Can anyone be injured by due to: <ul style="list-style-type: none"> <li>○ the plant coming into contact with live conductors</li> <li>○ plant being too close to high tension power lines</li> <li>○ damaged or poorly maintained electrical leads and cables</li> <li>○ damaged electrical switches</li> <li>○ water near electrical equipment</li> <li>○ lack of insulation against water contact shorting</li> <li>○ electrostatic radiation</li> </ul> </li> </ul>
STABILITY	<ul style="list-style-type: none"> <li>– Can machine tip or roll over due to stabiliser not extending.</li> <li>– Stabilisers failing structurally, mechanically, or retract unintentionally.</li> <li>– Setting up on soft ground, unlevel or uneven ground, excessive slope.</li> <li>– Travelling on rough surfaces, over potholes, hitting fixed objects, excessive side loads.</li> </ul>
STRUCTURAL FAILURE	<ul style="list-style-type: none"> <li>– Structural failure due to fatigue, corrosion, or overloading.</li> <li>– Pin, cable or linkage failure.</li> <li>– General overload, lifting excessive load, loading platform/ basket in an unintended way.</li> </ul>
MAINTENANCE	<ul style="list-style-type: none"> <li>– Can anyone be injured: <ul style="list-style-type: none"> <li>○ while carrying out routine, preventative or corrective maintenance</li> <li>○ adjusting equipment for essential components faulty or seized</li> <li>○ operating a machine that has been damaged or modified</li> <li>○ operating a malfunctioning machine</li> <li>○ if the machines guards/covers are missing</li> </ul> </li> </ul>
TRANSPORT	<ul style="list-style-type: none"> <li>– Can anyone be injured: <ul style="list-style-type: none"> <li>○ due to machine instability while loading/unloading, transporting</li> <li>○ plant or objects falling from transport truck</li> </ul> </li> </ul>
OCCUPATIONAL HAZARDS	<ul style="list-style-type: none"> <li>– Plant obstructing other plants at site.</li> <li>– Unauthorised use by untrained personnel.</li> <li>– Lack of personal fall protective equipment.</li> <li>– Use of the plant as a crane.</li> </ul>
OTHER HAZARDS, EJECTION OF PARTS VIBRATION	<ul style="list-style-type: none"> <li>– Can anyone be injured or suffer ill-health from exposure to: <ul style="list-style-type: none"> <li>○ chemicals, toxic gases or vapours, fumes, dust, noise, vibration, radiation</li> <li>○ neurological and cardiovascular disorders from excessive vibration</li> <li>○ inadequate visibility</li> <li>○ road traffic</li> <li>○ inadequate means of access</li> <li>○ safe use of controls (speed of movement)</li> <li>○ failure of controls</li> <li>○ safety signs or decals removed.</li> </ul> </li> </ul>

## Hazard Control Measures

Table 2 provides a summary of potential hazards associated with the plant and the relevant control measures Genie has implemented to minimise those potential hazards to the operator, platform occupants, maintenance personnel and bystanders.

<b>Table 2</b> <b>Hazard Control Measures</b>			
HAZARD NUMBER	HAZARD TYPE	LOCATION/SCENARIO	CONTROL MEASURES TO REDUCE RISK
1	OCCUPATIONAL HAZARDS	General operation by a trained, or untrained, operator leads to an accident.	<ul style="list-style-type: none"> <li>Comply with employer, job site and governmental rules.</li> <li>Read, understand and follow the instructions in the operators and safety manuals supplied with the plant.</li> <li>Use good safe work practices in a commonsense way.</li> <li>Only have trained/certified operators, directed by informed and knowledgeable supervision, running the machine.</li> </ul>
2	WORKSITE HAZARDS	Failure to perform a jobsite risk assessment	A complete jobsite risk assessment should be performed prior to using the plant. To assist with this effort, Genie provides operators and service manuals which identifies some of the common residual risks for the plant. Every employer, user, and operator should review these residual risks and implement the necessary control measures to avoid them. Users and employers should also research other supplemental information regarding the safe use of the plant, to support this effort (i.e. AS2550.10)
3	STRUCTURAL FAILURE	Failure of any structure	The plants have undergone detailed structural analysis. These calculations take into consideration the machines expected operating configuration, envelope, and approved conditions (i.e. slope)
4	STRUCTURAL FAILURE	Failure of any structure	Structural analysis takes into consideration a number of foreseeable forces including gravitational (based on rated capacity), dynamic , wind and manual forces.
5	STRUCTURAL FAILURE	Failure of any structure	Structural analysis is verified by physically testing the structural soundness through both static and dynamic loading.
6	STRUCTURAL FAILURE	Failure of any structure	All calculations, and verification, meets or exceeds the required structural safety factors of AS1418.10.
7	STABILITY	Tip-over	All plants have undergone detailed stability analysis. These calculations take into consideration the machines expected operating configuration, envelope, and approved operating conditions (i.e. slope)
8	STABILITY	Tip-over	Stability analysis takes into consideration a number of foreseeable forces including gravitational (based on rated capacity), dynamic , wind and manual forces.
9	STABILITY	Tip-over	Stability analysis not only evaluates the machines static condition, but also potential effects of dynamic conditions (i.e. braking, and depressions)
10	STABILITY	Tip-over	Stability analysis is verified by physically testing the static and dynamic stability of the design.
11	STABILITY	Tip-over	All calculations, and verification, meets or exceeds the required stability safety factors of AS1418.10.

**Table 2**  
**Hazard Control Measures**

HAZARD NUMBER	HAZARD TYPE	LOCATION/SCENARIO	CONTROL MEASURES TO REDUCE RISK
12	CRUSHING, ENTANGLEMENT, CUTTING, SEVERING, STABBING, PUNCTURING, SHEARING, IMPACT, HIGH TEMPERATURES	General operation	Guards are provided on the plant to protect persons at control positions, or standing adjacent to the plant at ground level, against thermal or mechanical hazards.
13	STABILITY, STRUCTURAL FAILURE	Overloading forks or tip over	Machine is used in accordance with operators manual, not overloaded and used on flat level surfaces..
14	STABILITY, STRUCTURAL FAILURE	Tip-over	To help avoid overturning of the plant the structure for the plant is equipped with both mechanical and non-mechanical limiting devices (i.e. limit switches) to limit the operating envelope.
15	TRAPPING, CUTTING, SEVERING, SHEARING	General operation	Trapping and shearing points between moving parts which are within reach of persons on the work platform or standing adjacent to the plant at ground level are avoided by providing safe clearances in accordance with AS 4024.1801, AS 1802 or AS 1803 or guarding in accordance with AS 4024.1601 as applicable.

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**Hazard Control Measures**

HAZARD NUMBER	HAZARD TYPE	LOCATION/SCENARIO	CONTROL MEASURES TO REDUCE RISK
16	COLLISION	Unintended platform movement	The plant extension is designed and constructed to prevent any inadvertent movement.
17	LIFTING CABLE FAILURE	Uncontrolled Platform lowering	Please ensure machine has failsafe braking option installed

## Product Safety

The information provided in this document is only a small example of the activities which have been undertaken by Genie Industries to ensure the safety of the plants. These include:

- Performing computer simulation/modeling of product and internal design calculations.
- Independent design review by an independent engineer to local design requirements is completed in Australia.
- Cycle testing of components to ensure fatigue life is adequate for a 10 year life is completed.
- Extensive field testing of prototype units to ensure faults and hazards are identified before design is finalised.
- Conducting an extensive Product Development Process, on each plant design, which incorporates risk assessment and field testing to prove the plant design is safe to use, by a trained and authorized operator, for its intended purpose.

## Occupational Health & Safety Legislation

The below legislation has been used to produce this document.

<b>ACT, NSW, QLD:</b>	Work Health and Safety Act 2011
<b>NT:</b>	Work Health and Safety (National Uniform Legislation) Act 2011
<b>SA, TAS:</b>	Work Health and Safety Act 2012
<b>VIC:</b>	Occupational Health and Safety Act 2004
<b>WA:</b>	Occupational Safety and Health Act 1984