GUIDELINES FOR USE

G-GUARD

G-Guard Range of Load Arrestors

Retractable Fall Arrest Safety Line for
Protection of Machinery & Sensitive Loads

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GUIDELINES FOR USE

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1. IMPORTANT NOTICE

READ EQUIPMENT LABELS AND 'GUIDELINES FOR USE' BEFORE USING THIS PRODUCT.

BEFORE INSTALLING THIS EQUIPMENT IT IS ESSENTIAL THAT USERS ARE FULLY AWARE OF HOW THE EQUIPMENT OPERATES, WHERE IT SHOULD BE USED, WITH PLANNED MAINTENANCE & SCHEDULED INSPECTION PROCEDURES INPLACE.

These products have been designed and developed to reduce the risk of damage to sensitive equipment, injury or death occurring as a result of an overhead load falling. G-Guards used in accordance with issued instructions will provide a backup safety system should the primary support fail.

For the G-Range of load arrestors to activate correctly, the protected load must be in unhindered free-fall upon failure of the primary support. If the activation speed is not reached then the G-Guard's fall brake may not engage to stop the falling load.
Incorrect use could lead to serious or fatal injury.

G-Guards are used in a wide range of diverse applications. Instructions for specific applications will vary. Some of the advice within these guidelines may not be suitable for all applications, causing safety hazards if incorrectly applied.

The safe use must be determined during a formal risk assessment, accompanied by an engineers report.

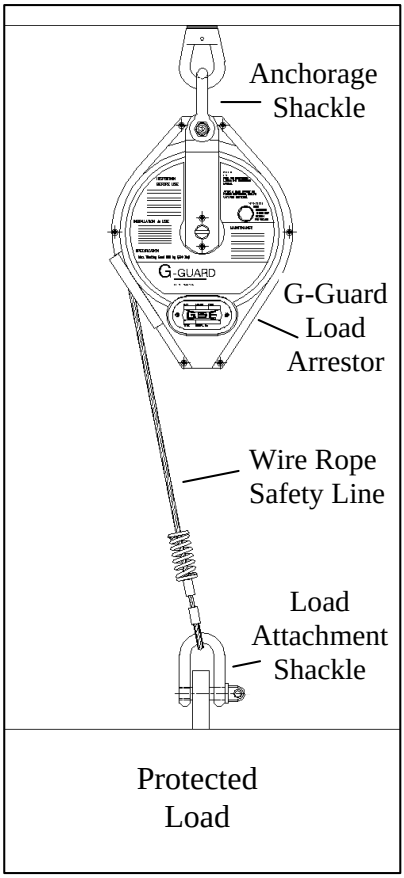
PRIOR TO USE:

Appropriate 'Risk Assessments' and 'Engineering Assessments' should be carried out, considering failure modes of the primary support and safe use of the G-Guard.

An initial inspection of the equipment should be performed. See 'Inspection Before Use' in section 3 of these notes and the Front Label of the G-Guard.

2. G-Guard Retractable Load Arrestor

The G-Guard is a retractable tensioned safety line for protection of machinery and sensitive loads. The fall protection brake includes a shock-absorbing element to minimise the forces encountered during a fall. The fall protection brake can be activated by quickly extracting the safety line from within the unit. This happens when a fall occurs.



The wire rope safety line is spring tensioned so that it extracts and retracts from the unit, ensuring that there is no slack rope. This enables the load to move freely while keeping the potential fall distance to a minimum.

In the event of a fall, rope is pulled out of the unit at an accelerating rate. On reaching the activation speed (see "specifications" on the rear cover of this booklet) the braking mechanism will engage. The energy of the fall is dissipated and the load brought to a halt. There should be adequate clearance below the protected load to safely stop a fall.
The load will remain suspended below or supported by the G-Guard.
To release the fall arrest brake, the suspended load must first be raised slightly to remove the loading from the unit.

The G-Guard must be immediately removed from use and returned to a Globestock authorised servicing agency for inspection and re-certification.

The G-Guard has a tough aluminium housing. Internal components are manufactured from aluminium alloys, stainless steel, steel, bronze, and brass.

3. Inspection Before Use

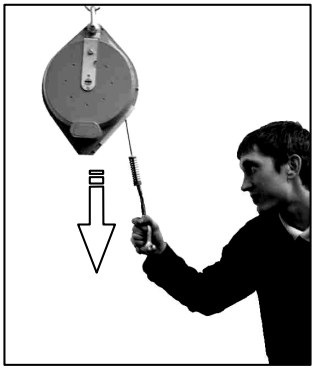
Before using the G-Guard inspect as follows.

Inspection

Inspect the fall arrest system for any signs of damage, wear or malfunction. The wire rope safety line should be extracted from, and allowed to retract back into the G-Guard as it is being inspected. The rope should freely return into the unit. No kinks, broken strands or excessive wear should be observed. Check the wire rope's shackle for security and wear of the pin.
The fall indicator lens must not show red.

Test

Test the fall arrest function by pulling sharply on the shackle. The brake must lock positively, and remain locked until the pressure is released.



4. Considerations for Use

- Should any doubt arise about the safe condition of this device DO NOT USE. Return to manufacturer or a manufacturer authorised servicing agency for assessment, service and re-certification, before further use
- Protect your hands when inspecting or handling the wire rope.
- The G-Guard may only be installed and used by a trained or otherwise competent person.
- The G-Guard should only be used or subjected to temperatures within the range of -30˚ to 70˚ centigrade. If the intended use is outside of this range then consult the manufacturer for application specific instruction.
- Be careful when installing G-Guards in applications where the primary support hoist runs at 70% or more of the fall arrest brake activation speed. This may cause the fall arrest brake to engage without a fall occurring.
- Significant vibration in the system may effect the performance of the G-Guard.
- Always position the anchorage or choose an anchorage point that keeps the fall distance to a minimum.
- Ensure there is adequate clearance below the working area to safely arrest a fall.
- The potential fall path should be free of obstructions.

- When the rope is extended do not release and allow the wire rope to run freely back into the device.
- There should always be 1 metre of wire rope within the unit during use. This last metre is coloured red and should not be visible outside the G-Guard's housing.
- Never allow the wire rope safety line to become slack during use.
- Do not allow the wire rope safety line to pass over sharp edges, electrical items/cables, become frayed or to kink as this weakens the rope.
- Once a fall has been stopped, the load will remain suspended from the G-Guard. This creates a hazard. A predetermined contingency plan should be implemented, as soon as possible, to make the load safe.
- If possible, do not leave the wire rope extended for long periods of time. This will cause the retraction spring to weaken at an accelerated rate. If this cannot be avoided the wire rope's retraction must be examined more frequently.

5. Installation

If in any doubt please contact either a specialist or the manufacturer for advice.

Connect the G-Guard to an anchor point by it's anchorage shackle. For optimum reliability the G-Guard should be installed with it's central axis lying horizontally. See the illustrations in section 6 for examples. Suspending the unit freely from its anchorage shackle ensures that this is achieved. See section 6.1.

The anchorages and attachment points used should ideally be separate from the one's used by the primary support. This will help to ensure an entirely separate backup system is in place.

The anchorage for the G-Guard should be positioned so as to:

1. Ensure the safety line is positioned directly above the protected load's anchorage point. This will help minimise the fall distance. In the event of a fall occurring, swinging of the load will be kept to a minimum.
2. Avoid any obstacles.
3. Ensure the wire rope runs as freely as possible.

5.1 Anchorage Requirements

- Anchorages strengths for the individual G-Guard model may be found on the front label attached to the unit.
- All anchor points must adhere to this minimum strength requirement per attached G-Guard.

- If the G-Guard is used with the wire rope doubled back over a pulley then the anchorage strength requirement is double that stated on the front label attached to the G-Guard being used.

5.2 Connection to the Load

- The wire rope's shackle should be attached directly to the protected loads attachment point.
- Connectors must have a minimum strength of at least the anchorage requirements stated on the front label attached to the G-Guard.
- Wire rope or webbing lanyards must not be used to extend the length of the wire rope. This may hinder the retraction of the safety line.
- The attachment point when using a single G-Guard should be directly above the loads centre of gravity. This will minimise 'rolling' of the load when stopping it's fall.

6. Assessing The Working Environment

For use as a backup safety system to protect overhead loads or structures against the danger of falling should the primary means of support fail. The G-Guard's retractable safety line is suitable for protecting loads that may require vertical mobility.

The use must be identified and verified by formal risk assessments and engineering assessments, where deemed necessary.

An assessment to determine the safe use and post-fall retrieval plan should be carried out after considering the points raised in this manual.

Each application may be different. These instructions are produced as a guide only. They can never replace the requirement for a formal assessment of each application by a suitably competent person. The examples in sections 6.1 & 6.2 help to illustrate this.

The working procedures may need to be continually considered to suit any changes in the working environment.

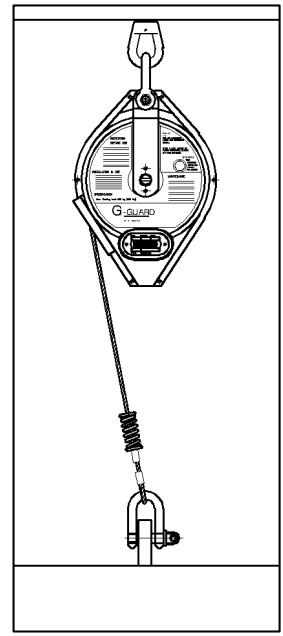
6.1 G-Guard Anchored Vertically Overhead

Working with the G-Guard anchored vertically overhead is the ideal arrangement for use. The potential fall distance is kept to a minimum. The rope retraction force and retraction spring life is maximised.

There should be adequate clearance below the working area to allow a fall to be stopped safely. Approximate stopping distances can be found in the 'Specifications' on the rear of this booklet.

Be aware of obstructions that may hinder freefall, should a fall occur, as this may increase stopping distances.

The G-Guard range is suitable as backup fall protection when anchored vertically above a load. This will facilitate vertical movement of the load, while maintaining a tight safety line to keep fall distances to a minimum.



Backup fall protection can be provided for:

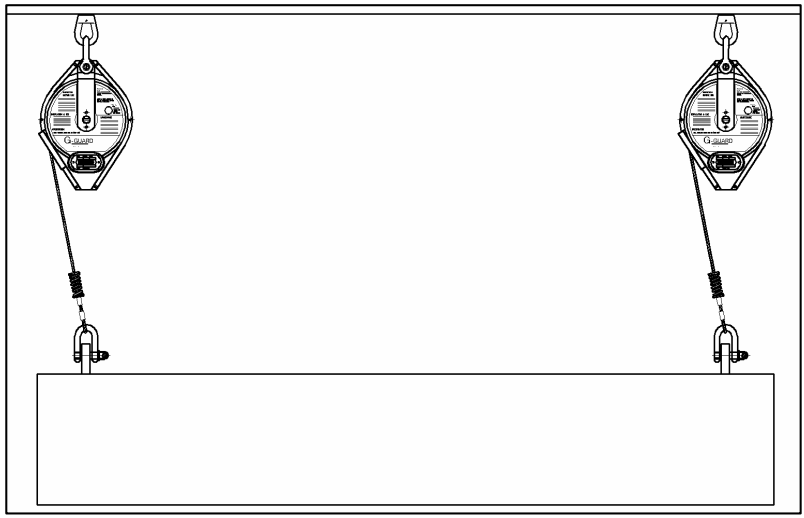
- Raised or suspended loads.
- Raised gates.
- Costly equipment.
- Loads suspended above areas where it is not practical to completely prevent access.
- Raising equipment into location.
- Overhead equipment or structures subject to vertical movement.
- Production equipment.

Load Protected by One G-Guard

The wire rope safety line must be attached at the central point of the load, close to the hoist attachment if applicable, or so as to ensure maximum stability in the event of a fall arrest. The anchorage point on the protected load must be directly below the overhead anchorage point. Attaching the safety line directly below the overhead anchorage, to the central point of the load will help to minimise the amount of swing and dangerous movement when a fall is stopped. Attaching the load off centre will cause the load to rotate, which could cause further hazards or in extreme cases, damage to the supporting safety line.

Load Protected by Multiple G-Guards

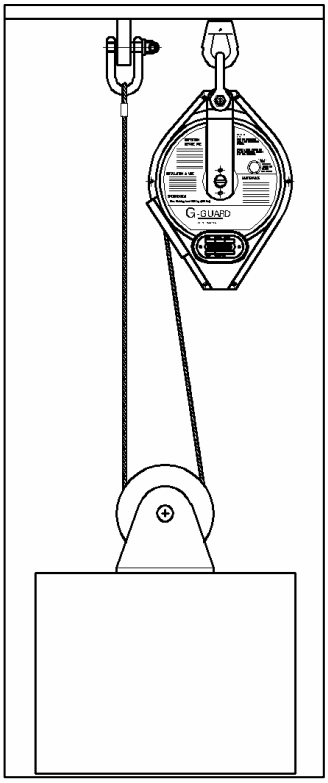
This is advised where the load is extended out in the horizontal plane. These types of loads or structures will swing and roll more uncontrollably due to their shape. It is recommended that these items are protected with G-Guard's mounted at the far extremities, to minimise fall distance and aid stability.
Certain structures may break apart in the event of a fall arrest, so further consideration must be given to avoid this. It may be necessary to provide additional protection/support at identified critical points.



G-Guard with Safety Line Doubled over a Sheave or Pulley

In this configuration, the maximum working load can be doubled. This also has the effect of halving the activation speed. This system is also more sensitive to vibration of moving loads and erratic movements, which may result in activation of the fall brake when a fall has not occurred. The strengths of the overhead anchorage and the protected load attachment point must both be double that stated on the front label of the G-Guard.

The sheave or pulley must be strong enough to support a load of double that stated on the front label of the G-Guard.



The wire rope must not be able to come off the pulley during operation.

As the safety line's retraction spring has to rotate the pulley in order to keep the safety line taught, the pulley must be as free running as possible. This additional resistance will decrease the working life of the internal retraction spring, therefore additional maintenance may be required.

Protecting Guided Loads

Multiple G-Guard units cannot be used to protect loads that run between rigid vertical rails. This is because the fall arrest brakes do not activate at precisely the same time. One of the units may not activate, causing the full load to bear onto one unit only. This will cause overloading of the unit.
In this configuration, only one G-Guard should be used for protection.

Be certain that the capacity of the G-Guard will not be exceeded.

6.2 G-Guard Anchored Horizontally

Where there is limited overhead space, it may be possible to mount the G-Guard horizontally out from the protected load.
The G-Guard must be mounted with the rope drum axis remaining horizontal for reliable operation.

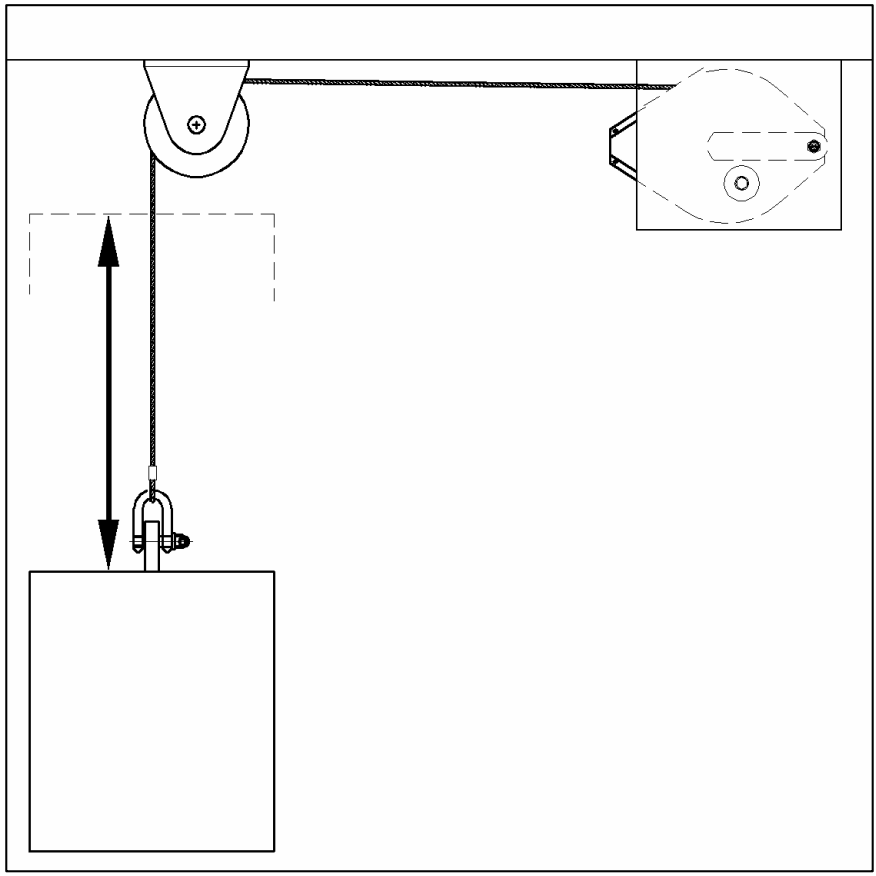
Use a free running pulley with strength of at least twice the value specified on the front label of the installed G-Guard.

In the event of a fall, the wire rope safety line must not pass over:

- sharp or abrasive edges.
- masonry or steelwork.
- electrical wires or components that may harm the user.
- anything that may catch, trap or shear the wire rope.

The above points are critical.

In the event of the primary support failing, the load will enter into freefall. The G-Guard's brake mechanism will activate at approximately the speed specified in the rear of this manual. If the fall does not reach this speed then the brake may not activate.



7. Considerations for After a Fall

Upon failure of the primary support, the protected load enters into accelerating free-fall. When the G-Guard's activation speed is reached the fall brake engages bringing the falling load to a stop. The load will remain suspended.

The surrounding area must be immediately cordoned off, preventing unauthorised access until the load is moved to a safe area.

The suspended load must be moved to a safe area (the ground or a safe platform) as soon as possible.

In order to release the fall arrest brake mechanism, the suspended load must be lifted, allowing the rope to retract a little way into the G-Guard. This should allow the fall arrest mechanism to disengage. If the brake has disengaged, wire rope should pull out from the unit.

Note: After stopping a fall it is common for the wire rope to stick on the rope drum inside the unit. This may prevent the load from being lowered while attached to the G-Guard.

Once the G-Guard has been used to stop a fall it must be removed immediately from use. The unit must be returned to a Globestock authorised servicing agency for inspection, test and re-certification, before further use.

8. Inspection & Maintenance

Like all complex mechanical safety devices, the G-Guard requires regular inspection and maintenance to ensure that the unit functions correctly.
Repairs or servicing should never be carried out on site or in the field. Do not tamper with or modify the unit.

8.1 Periodic Examination.

The G-Guard should be periodically examined by a competent person, other than those using the equipment, at least once in every 6 months dependant upon the frequency of use and the operating environment. Applications involving a large number of extraction / retraction cycles should be periodically examined at least every 3 months or 100,000 cycles. The 'Examination Record' found on the rear of this booklet, outlines the main examination criteria. On passing this examination the record can be completed, signed off and the unit returned for use. Any observed faults must be rectified. If necessary or in any doubt, return the G-Guard for service and re-certification.

8.2 Service & Re-Certification.

The G-Guard must be returned for servicing annually and in the event of a fall arrest. Only a Globestock approved servicing agency can be used for this. On completion of a service and retest, a new Test Certificate will be issued which validates the unit for a further year of use.

8.3 Cleaning, Storage and Transportation

The G-Guard's exterior may be cleaned using warm water with a mild detergent. It should then be hung, by it anchorage shackle, to dry.

In order to maintain the wire rope safety line, extract the rope from the unit, removing any soiling. Apply a little light oil to a cloth. Hold the cloth around the rope, allowing the rope to slowly retract back into the unit. This will leave the rope lightly oiled, while ensuring the internal mechanism is not oil contaminated.

The unit should be stored in a clean, dry, chemical free environment. The unit is best stored off the floor, ideally hanging by it's anchorage shackle.

During transportation the G-Guard should be boxed or suitably retained so as to prevent damage or deterioration.

EXAMINATION RECORD G-GUARD 1100, 800 & 900 Series. Manufacture Date: ..... Serial No: ..... Date First Used:		SIGN																							
		DATE																							
Function	Cable locks when pulled sharply																								
	Cable extracts fully																								
	Cable retracts fully																								
Cable	No broken strands or kinks																								
	Free of severe corrosion																								
	Thimble / Eyelet present																								
	No excessive wear of Rope Exit																								
Shackle & Pin	Present & Free of Damage / Wear																								
Case / Housing	Free of damage & cracks																								
	Fasteners present & secure																								
	Labels present & Legible																								
Fall Indicator	Lens does not show Red.																								
Application Specific Checks & Additional Points:																									
	Next Service Due																								

SPECIFICATIONS

G-GUARDS

Model Number			**1110G**		**807G**		**810G**		**815G**		**907G**		**909G**	
Max Working Load:	kg	(lbs)	**250**	**(550)**	**500**	**(1100)**	**500**	**(1100)**	**500**	**(1100)**	**1500**	**(3300)**	**1500**	**(3300)**
Rope Length:	m	(ft)	10	(33.0)	7	(23.0)	10	(33.0)	15	(50.0)	7	(23.0)	9	(29.7)
Height:	mm	(inches)	480	(18.9)	620	(26.7)	620	(26.7)	620	(26.7)	680	(26.7)	680	(26.7)
Width:	mm	(inches)	230	(9.0)	290	(11.5)	290	(11.5)	290	(11.5)	290	(11.5)	290	(11.5)
Depth:	mm	(inches)	130	(5.2)	135	(5.4)	135	(5.4)	135	(5.4)	152	(6.0)	152	(6.0)
Weight: (approx)	kg	(lbs)	9.0	(19.5)	15.0	(33.0)	15.5	(34.0)	16.0	(35.0)	22.0	(48.0)	24.0	(53.0)
Rope Speed to Activate Brake: (approx)	m/s	(ft/s)	0.9	(3.0)	0.9	(3.0)	0.9	(3.0)	0.9	(3.0)	0.6	(2.0)	0.6	(2.0)
Stopping Distance (approx) min:	m	(ft)	0.3	(1.0)	0.3	(1.0)	0.3	(1.0)	0.3	(1.0)	0.3	(1.0)	0.3	(1.0)
Stopping Distance (approx) max:	m	(ft)	0.7	(2.3)	1.0	(3.2)	1.0	(3.2)	1.0	(3.2)	0.7	(2.3)	0.7	(2.3)