



NRAG GUIDANCE - MATERIALS HANDLING LIFTS

The following companies or associations endorse this NRAG Guidance



the worldwide voice of entertainment technologies

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Foreword

Genie Industries' Superlifts (Contractor lifts) were designed for supporting ducting during installation. In the early 1980's entertainment industry pioneers found an alternative use for these to provide ground support for trusses.

Since then, Genie and other manufacturers have recognised the entertainment industry as another application for their products, some even being sold as entertainment industry specific.

For the purposes of this document 'Lifts' are defined as mobile, manual winch operated machines with telescopic sectional masts intended for use in lifting production equipment above head height.

The advantages of these Lifts are their portability, speed of deployment and ability to lift up to 300kg loads manually to a height of around 7m without need of any overhead support.

Their disadvantages include their predisposition to being damaged in handling or transit. All rely on a sound, level base and vertical mast for stability.

Lifts are often used because suspension alternatives are assumed to be absent, unnecessary or too costly.

The most appropriate method for raising and holding a load must always be determined by a competent person to ensure correct installation and to provide a safe system of work

Use

The provision and use of Lifts is governed by the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 1998).

LOLER 1998 requires every employer to ensure that every lifting operation involving lifting equipment is properly planned by a competent person, appropriately supervised and carried out in a safe manner.

This demands that:

- A risk assessment and method statement exists for the activity
- The manufacturer's guidance is followed
- All the people involved are competent for the task in hand.

When operating Lifts there must always be:

1. One person in charge of the lifting operation who has a clear view of the load to be lifted/lowered;
2. One operator per Lift;
3. Sufficient 'spotters' for any features out of the view of the supervisor (obstructions to lift, etc);
4. Clear communication which is understood by all prior to and during the lift/lower.

If a Lift will not raise its load without great effort, the operation must be halted and the reason for the resistance identified and corrected.

Entertainment industry use

Unless specifically designed for such use, the load should not be supported by a Lift except when building or striking a structure. The method statement should state whether, once lifted, the load should be supported by suitable means and that process reversed at the strike of the structure.

Floor surfaces supporting Lifts must be capable of supporting the point loads that lifts impose. Staging units, rostra, risers, timber floors etc., must be checked as being adequate by a competent person prior to being used to support Lifts.

Groups of Lifts are frequently used to lift a single load such as a lighting grid, truss or scenic structure during installation and removal; however it should be a last resort when no alternative means of lifting is feasible.

When more than two lifting machines are used to lift one load it is impossible to calculate the load on each because the structure becomes 'statically indeterminate'. Therefore the load carried by each Lift should be assumed to be variable and to account for this a competent person should consider de-rating the Lifts.

The structure being lifted or lowered by Lifts should be supported in a way that should one Lift fail to offer support, the load would not change position or deflect significantly.

Where structures are being lifted to a height with a group of Lifts, the load carried by each Lift should be assumed to be variable.

The lifting plan should include

- De-rating as appropriate, the load capacity of each lift
- Lifts being sited at appropriate positions to adequately support the structure, and to maintain the desired aspect of the load to reduce load transfer between Lifts throughout the lifting or lowering operation
- How redundancy has been considered and is maintained throughout the lifting and lowering operation.

Supporting loads with a combination of chain hoists and Lifts should be avoided (e.g. chain hoist at one end of a truss and a lift at the other).

Securing the load to prevent the load slipping is good practise, however, strapping the load too tightly to the forks can apply a twisting action which when translated to the mast can compromise stability of the Lift and potentially destabilise the entire group and the load they carry.

Use of Lifts outdoors

Outdoor use is beyond the scope of this document. It is likely there may be a far safer alternative. The complexities of outdoor use cannot be overemphasised and if planning to use Lifts outdoors, first check that the Lift is designed for such use and you have the manufacturer's instructions.

The lifting plan should be drawn up by a competent person(s) who may be a consulting engineer, staging company, rigging company or combination of all three.