

Safe use of Mobile Gantries

This document is issued in accordance with the requirements of section 6 of the Health and Safety at Work Act 1974, amended March 1988. It outlines the care and safe use of Mobile Gantries and is based on section 16 of the LEEA code of practice for the safe use of lifting equipment*. It should be read in conjunction with the requirements for lifting appliances for general purposes, given overleaf, which form an integral part of these instructions.

This information is of a general nature only covering the main points for the safe use of mobile gantries. It may be necessary to supplement this information for specific applications.

ALWAYS

- Store and handle mobile gantries correctly.
- Inspect the gantry, block and accessories before use and before placing into storage.
- Ensure the surface on which the gantry is placed is level, even and capable of taking the imposed loads.
- Position the gantry so that the lifting appliance is directly over the load.
- Where fitted, apply brakes, parking jacks and wheel locks before attempting to raise the load.
- Disconnect power supplies etc before attempting to move the gantry to a new position.

NEVER

- Attempt to move a gantry whilst under load.
- Use a vehicle, winch etc to tow a gantry.
- Allow the load to swing unduly or in an uncontrolled manner.
- Rotate loads unless the centre of gravity will remain under the centre line of the runway beam.
- Allow persons to pass under suspended loads.
- Place ladders or climb on unrestrained gantries.

Selecting the Correct Gantry

Mobile gantries are available in a range of capacities, sizes and design options. Select the gantry to be used and plan the lift taking the following into account:

- Type of gantry- goal post, a frame, fold away, adjustable height, self erecting.
- Capacity- runway height and length
- Type of bracing- internal, external, boxed or spliced.
- Type of block and trolley to be used.
- The need for brakes, wheel locks or parking jacks.

Note: mobile gantries are not intended for movement under load and are portable only to allow their positioning over the load. Special gantries can be made suitable for movement under load, in which case the supplier's specific instructions for safe use must be sought and followed.

Storing and Handling Mobile Gantries

Never return damaged gantries to storage. They should be dry, clean and protected from corrosion.

Gantries left erected for storage should be positioned so as not to present hazard to persons, goods, vehicles etc that may be in the area. Where fitted parking jacks should be used to take the weight off the castors and

prevent movement, otherwise brakes applied or other steps taken to restrain the gantry.

Gantries which are dismantled for storage should be packed and stored in such a way that all of the components and structural members are kept together safe from loss or incorrect substitution.

Installing and Commissioning

Follow the specific instructions for erection issued by the supplier as these will vary with the design. Never force or hammer bolts, locking pins etc into place. Damaged or lost bolts, nuts, washers etc must only be replaced with identical items of the same grade and size. Never place ladders or climb on unrestrained gantries.

Using Mobile Gantries Safely

Do not use defective gantries, blocks or accessories.

Inspect the gantry to ensure it is correctly erected and that all bolts, pins etc are correctly in place.

Position the gantry carefully aligning the runway track with the direction of load travel. The block hook must be directly over the centre of gravity of the load. The standing area must be level and capable of sustaining the imposed loads. Where necessary use floor plates to achieve this. Caution must be exercised to avoid hidden dangers such as buried cables, pipes etc.

Ensure the gantry remains stable during lifting operations. If fitted, jacks should be in contact with the floor, brakes applied or wheel locks in position.

Do not attempt to move a gantry whilst under load.

Avoid swinging loads. The centre of gravity of the load should always be under the runway centre line.

Ensure power supply leads etc are disconnected before moving the gantry to a new position.

In-service Inspection and Maintenance

The maintenance requirements may be combined with those of the lifting appliance. Bearings and screw jacks should be lubricated. The running surface of the track should be clean and free of debris etc.

Regularly inspect the gantry and, in the event of the following defects, refer the gantry to a competent person for thorough examination: structural defects, damage, distortion or cracked welds; loose or missing bolts, locking pins etc; damaged wheels, jacks or ineffective braked: damaged or missing runway end stops; any other visible defects.

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Further information is given in:

*The code of practice for the Safe Use of Lifting Equipment, published by: LIFTING EQUIPMENT ENGINEERS ASSOCIATION.

LIFTING APPLIANCES FOR GENERAL PURPOSES (MANUAL AND POWER OPERATED BLOCKS)

The following information is based on Section 1- appendix 1.6 of the LEEA Code of Practice for the Safe Use of Lifting Equipment.* It should be read in conjunction with the instructions for the safe use, given overleaf, of which it forms an integral part and with any specific instructions issued by the supplier.

This information is of a general nature only covering the main points for the safe use of manual and power operated blocks.

ALWAYS

- Ensure suspension points and anchorages are adequate for the full imposed load.
- Check the load chain/wire rope is hanging freely and is not twisted or knotted.
- Position the hook over the centre of gravity of the load.
- Check the travel path is clear.
- Ensure the landing area is properly prepared.

NEVER

- Exceed the marked SWL.
- Use the load chain/wire rope as a sling.
- Shock load the block or other equipment.
- Lift on the point of the hook.
- Overcrowd the hook with fittings.
- Permit the load to swing out of control.
- Leave suspended loads unattended.

Types of Blocks

A wide range of manual and power operated blocks is available. This section of the leaflet is concerned with matters which are common to the safe use of the following listed equipment when used to lift in a vertical plane only.

Pulley blocks for fibre or wire rope used with winches, hand chain blocks, chain lever hoists, power operated wire rope blocks and power operated chain blocks. The use of trolleys is often associated with blocks and these may be built in with the trolley as an integral part of the appliance, or independent with the block hung on.

Operative Training

Lifting appliances should only be used by trained operatives** who understand their use and that of the associated equipment used in the lift.

Installation and Commissioning

The erection procedure will vary with the equipment and should be carried out in accordance with the suppliers' instructions paying attention to the following matters:

Prior to installation inspect the equipment to ensure no damage has occurred in store or transit.

Ensure the support structure is adequate for the full loads that will be imposed, is tested and marked with the SWL.

When erecting trolleys ensure they are correctly set for the beam width and that the track is fitted with end stops and remains level at all loads up to the maximum.

When suspending appliances by the top hook ensure the support fits freely into the seat of the hook.

After erection ensure that the chain/wire rope hangs freely and is not twisted or knotted.

With power operated blocks the supply should be connected by a suitably qualified person taking account of any statutory or technical requirements (e.g. electricity at work regulations, pressure systems and transportable gas containers regulations)

Test run to ensure the free and correct movement of the chain/rope. Check the operation of the brake. Check direction of control command, position and operation of travel limits and safety devices.

Safe Use of Blocks

The basic objectives of any lifting operation are to move the load to the desired location and land it safely, efficiently and without damage to the load, the equipment used or the surrounding buildings, plants etc. In addition to any specific instructions relating to the block the following general points must be observed.

- Never attempt lifting operations unless you have been trained in the use of the equipment and slinging procedures.
- Position the hook directly over the centre of gravity so that the line of pull is vertical.
- Do not use the chain/wire rope to sling the load, i.e. do not wrap it round the load, back hook or choke hitch.
- Do not lift on the point of the hook or overcrowd the hook with fittings.
- Never lift/lower more than the marked SWL. In the case of manual equipment if abnormally high effort is required, and with power operated appliances they fail to lift the load, or if the load slips this is an indication of too high a load or a fault- check the load and the appliance. Avoid unnecessary inching of power operated appliances and do not impose sudden or shock loads.
- Push rather than pull loads suspended from appliances with push/pull trolleys and if un-laden pull on the bottom block hook. Never pull an appliance by the pendant control, supply cable or hose. Avoid sudden movement of travel motion or undue effort in pushing the load which can cause the load to swing.
- Avoid excessive or intentional use of motion limits unless they are additional limits intended for that purpose. Avoid running appliances against end stops.
- Do not allow anyone to pass under or ride upon the load. Never leave suspended loads unattended unless in an emergency then ensure the area is cordoned off and kept clear.
- Do not remove guards, protective covers, weather proof covers, heat shields etc without the authority of a competent person.

In-Service Inspection and Maintenance

The Factories Act 1961, and the various regulations made under the act require that lifting machines or appliances are properly maintained. This is an ongoing duty that falls on the user and a planned routine maintenance programme will be necessary. In addition to the statutory thorough examinations by a competent person, regular in-service inspections should be made to find any faults and damage that might arise. If any are found they should be referred to the competent person.

The maintenance programme must meet the requirements of the manufacturer's instructions and any special requirements due to the conditions of service. This may be combined with maintenance of other equipment used in association with the appliance, e.g. power feed system. Check the block and its associated equipment daily for obvious faults and signs of damage.

Further information is given in:

*LEEA Code of Practice for the Safe Use of Lifting Equipment.

** HSE Guidance Note GS39- Training of Crane Drivers and Slingers.