



Instructions for the safe use of: Winches Used For Lifting

The information in this leaflet should be passed to the user of the equipment

DLH ONLINE

This document is issued in accordance with the requirements of Section 6 of the Health and Safety at Work etc Act 1974, amended March 1988. It outlines the care and safe use of WINCHES USED FOR LIFTING and is based on Section 6 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 winches used for lifting. It may be necessary to supplement this information for specific applications.

ALWAYS:

- Store and handle winches correctly.
- Inspect the winch, rope and accessories before use and before placing into storage.
- Ensure mounting and suspension points are secure and suitable for the full loads that will be imposed.
- Lift the load just clear, halt for a short period to ensure the integrity of the brake or sustaining mechanism before completing the lift.
- Use a speed appropriate to the specific application.
- Keep hands and feet clear of ropes, drums etc.

NEVER:

- Raise loads by revolving the drum in the opposite direction to that indicated.
- Use winches with loose or insecure handles.
- Use the pawl to arrest descending loads.
- Use winches if the rope is twisted or trapped.
- Over wind the rope on or off the drum.
- Use winches for man-riding applications unless they are specifically designed for that purpose.

Selecting the Correct Winch

Winches are available for manual or power operation in a range of capacities, designs and mounting arrangements. Select the winch to be used and plan the lift taking any statutory requirements and the following into account:

Type of winch - manual, electric, pneumatic or other operation - mounting, eg wall, floor, lorry etc - capacity and rope drum storage etc.

Speeds and control - single speed, dual speed - push button, pull cord, lever, remote etc.

Rigging arrangement - diverters, pulley blocks - anchorage and suspension points - imposed loads.

Consult the supplier if the winch is to be used in areas of high risk, exposed to the elements, water, steam etc, with hazardous substances, eg acids or chemicals, or subjected to extremes of temperature.

Storing and Handling Winches

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

With winches used for temporary applications, remove the rope for separate storage or wind it fully onto the drum and lash in position to prevent damage.

With winches left in situ, remove pulleys etc and wind the rope fully onto the drum. Where this is not possible, pulleys etc should

be positioned to protect them from damage and so as not present a danger to persons or other equipment. Isolate any power supply.

Installing and Commissioning

Follow the specific instructions for installation and commissioning issued by the supplier. Handle the rope carefully. If the winch fails to operate correctly contact the supplier.

Using Winches Safely

Do not use defective winches, ropes, pulleys etc.

Check the rigging arrangement, that mounting and suspension points are secure and adequate for the imposed loads. Do not use timber bearers. Ensure sheaves are correct for size and type of rope, that fleet angles are not too great, the rope is not twisted and the load is free to move. Check operating handles are secure.

Raise the load just clear, halt the lift to ensure the integrity of the brake, slinging arrangement etc.

With manual winches, only the slow speed should be used to raise/lower loads. With power operated winches, select a speed appropriate to the specific lifting operation.

Ensure oil, water or other foreign matter does not come into contact with lined brakes.

If the direction of rotation is indicated the winch must raise the load when turning in that direction.

Check the rope and load travel paths are clear and you have a clear view so as to avoid accidents or collisions. Do not over wind the rope on or off the drum. Two turns must always remain on the drum. (Some manufacturers design for more and their recommendations must be followed.)

Keep fingers, toes etc clear of ropes, pulleys, drums and other moving parts.

In-service Inspection and Maintenance

Follow the specific instructions for maintenance issued by the supplier. These should be incorporated into the site maintenance programme observing any particular needs due to the site or working conditions

Regularly inspect the winch and, in the event of the following defects, refer the winch to a Competent Person for thorough examination: mounting insecure; loose or missing bolts; winch frame distorted; rope drum flanges chipped or cracked; rope anchorage loose or pulled; ratchet or pawl worn; brake worn or slipping; rope worn, or winding incorrectly; broken wires; gears worn, or not positively locating; any other visible damage, corrosion, defects or operational faults.



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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

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LIFTING APPLIANCES FOR GENERAL PURPOSES

(MANUAL AND POWER OPERATED BLOCKS)

The following information is based on Section 1 - Appendix 1.6 of the Code of Practice for the Safe Use of Lifting Equipment* and should be read in conjunction with the instructions for 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 operation of the brake before making the lift.
- Ensure the slings are secure and load is free to be lifted.
- 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.
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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 a 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 (eg 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, plant etc. In addition to any specific instructions relating to the block the following general points must be observed:

- o Never attempt lifting operations unless you have been trained in the use of the equipment and slinging procedures.
- o Position the hook directly over the centre of gravity so that the line of pull is vertical.
- o Do not use the chain/wire rope to sling the load, ie do not wrap it round the load, back hook or choke hitch.
- o Do not lift on the point of the hook or overcrowd the hook with fittings.
- o 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.
- o Avoid unnecessary inching of power operated appliances and do not impose sudden or shock loads.
- o Push rather than pull loads suspended from appliances with push/pull trolleys and if un-laden pull on the bottom hook. Never pull an appliance by the pendant control, supply cable or hose.
- o Avoid sudden movement of travel motion or undue effort in pushing the load which can cause the load to swing.
- o Avoid excessive or intentional use of motion limits unless they are additional limits intended for that purpose. Avoid running appliances against end stops.
- o 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.
- o 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 Provision and Use of Work Equipment Regulations 1998 and the Lifting Operations and Lifting Equipment Regulations 1998 both require that lifting equipment 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 manufacturers 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, eg 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

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