Lifting Equipment Engineers Association

Guide to Documentation and Marking – Part 2 Powered Lifting Machines

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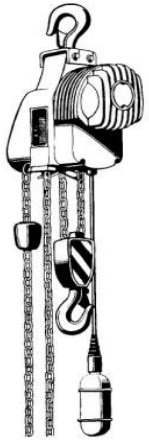
Introduction.

This guide is aimed at manufacturers, distributors and users of lifting equipment within the European Economic Area. It has been developed as a quick reference guide to ensure that lifting equipment is supplied with the correct documentation and marking as required by current legislation, standards and best practice guidance.

LEEA 059-2 is one of a series of guides related to documentation and marking of a range of generic forms of lifting equipment as listed below:

Part 1 – Manual Lifting Machines
Part 2 – Powered Lifting Machines
Part 3 – Lifting Machine Supporting Structures
Part 4 – Lifting Accessories, Non-fixed load lifting attachments.
Part 5 – Lifting Accessories, Slings
Part 6 – General accessories and Components for slings.

Item & Standard	*Required Information*
Power Operated Hoists **Electric Hoist** Generally used where a permanent lifting facility is required in conjunction with either an overhead runway, jib crane or overhead travelling crane.  **BS EN 14492-2 Cranes – Power Driven Winches & Hoists – Part 2: Power Driven**	**Documents to be supplied in accordance with the relevant legislation & relevant standard:** - **EC Declaration of Conformity (Guidance LEEA 080.1)** - **Manufacturer's instructions for use (Guidance LEEA SI.14.3)** **Marking requirements:** - **CE Mark** - **Business name and address of the manufacturer** - **Designation of the machinery** - **Type designation** - **Identification number, if any** - **Year of manufacture** - **Explosion proof class (if applicable)** - **IP rating** - **Safe working load** - **Range of lift** - **Group of mechanisms.** - **Details of lifting media, Chain diameter, pitch and grade or wire rope construction and minimum breaking force.** - **Power supply information, voltage, phase(s), frequency, rated flow (hydraulics) and rated pressure (pneumatics).** - **Motor size (kW)** - **Rated hoisting speed.** - **Rated traverse speed if fitted with combined trolley.** *Note if manufacturer does not provide a unique identification mark, then the owner of the equipment will be responsible for ensuring that the equipment is marked with one.*

Hoists.

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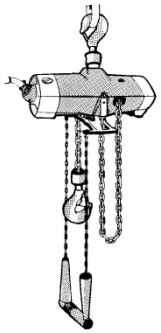
Pneumatic Hoist

Generally used where there is a requirement for a powered hoist but the use of an electric hoist is not allowed for safety reasons. Can be considerably smaller units than the equivalent electric powered chain hoist.



BS EN 14492-2 Cranes – Power Driven Winches & Hoists – Part 2: Power Driven Hoists.

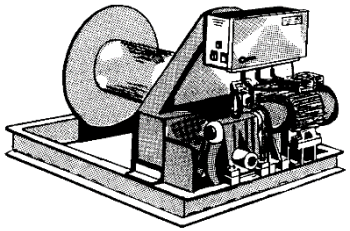
Information Which Should Be Exchanged Between The User & Designer Or Supplier

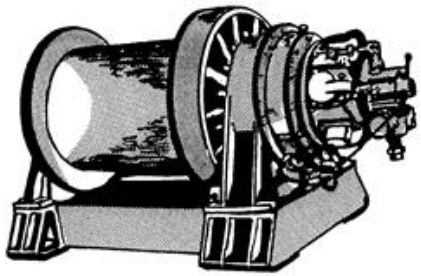
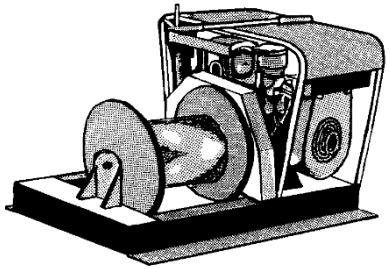
As electric power operated hoists are frequently used for miscellaneous lifting purposes, precise details of the load to be lifted are not always available. In these circumstances, only a general specification can be given and this should include the following information:

1. Maximum load to be lifted or SWL.
2. Type of hoist, ie chain or wire rope.
3. Range of lift.
4. Maximum drawn up dimension.
5. Maximum extended dimension.
6. Type of suspension, eg hook/eye, push/geared/electric travel trolley, in the case of a trolley suspension, details of the runway beam section and size.
7. Lifting speed(s).
8. Power supply, voltage, phase(s) and frequency.
9. Details of the power feed system if required.
10. Type of control, eg pendant, remote etc, including pendant length etc. If unspecified, the manufacturer will assume pendant control and this will be arranged to suit the hoist on the basis of the operating level being at the extended dimension.
11. Special service conditions or safety requirements which may affect the hoist design, eg outdoor use, use in a flammable atmosphere etc.
12. Classification if known or details of the state of loading and duty cycle etc.
13. Any accessories that may be required, eg slack chain collecting box, working limits etc.
14. Any other special requirements.

It may subsequently be found that a more detailed exchange of information is necessary to ensure the correct selection. For all but the simplest or repeat installations, a visit by the supplier to survey the site should always be considered as this will minimize the information exchange and reduce the chance of incorrect selection.

Further technical information may be required by the user at the time of installation or for maintenance purposes. It will be contained in the manufacturer's operations and maintenance handbook, which will be supplied with the hoist, and does not otherwise form part of the information exchange.

Hydraulic Hoist Similar operation to the pneumatic powered chain hoist although instead of air pressure being used & then expelled into the atmosphere, oil pressure is used & remains captive within a sealed unit **BS EN 14492-2 Cranes – Power Driven Winches & Hoists – Part 2: Power Driven Hoists.**	**Note:** Unless instructed otherwise, the supplier will assume the hoist is to be used in normal service conditions and the hoist will be supplied from the manufacturer's standard range of equipment. **Additional information for Pneumatic Hoists:** The exchange of information necessary for pneumatic hoists will generally take the same form as for electric hoists except for the power supply details, these should be given as follows: 1. Pressure & delivery rate. 2. Type of supply system, e.g. coiled hose, including any requirements for filters, lubricators & pressure regulators. 3. Type of control. If hoist has powered trolley, this should include the requirements for the trolley controls. **Additional information for Hydraulic Hoists:** The exchange of information necessary for hydraulic hoists will generally take the same form as for electric hoists except for the power supply details, these should be given as follows: 1. Pressure & delivery rate. 2. Type of supply system. 3. Type of control. If hoist has powered trolley, this should include the requirements for the trolley controls.
Winches used for Lifting Purposes 	**Documents to be supplied in accordance with the relevant legislation & relevant standard:** - **EC Declaration of Conformity (Guidance LEEA 080.1)** - **Manufacturer's instructions for use. (Guidance LEEA SI.15.3)** **Marking requirements:** - **CE Mark** - **Business name and address of the manufacturer** - **Designation of the machinery** - **Type designation**

Electric Winch.  **Pneumatic winch**  **Petrol winch**	- **Identification number** - **Year of manufacture** - **Explosion proof class, if applicable** - **Safe working load or pulling force. Including relevant information for first and last layer.** - **Group of mechanisms** - **Details of the lifting media, chain diameter, pitch and grade or wire rope construction and minimum breaking force.** - **Power supply information, voltage, phase(s), frequency, rated flow (hydraulics) and rated pressure (pneumatics)** - **Motor size (kW)** - **Rated hoisting speed.** - **Direction and rotation of the drum.** *Note 1: for vehicle recovery winches and winches on boat trailers the following statement should also be marked on the winch; 'this winch shall only be used for vehicle recovery or for pulling and lowering boats off trailers.'* *Note 2: the wire rope / chain fitted to the winch, together with any permanent attachments made to the rope/chain, must be considered as individual items. They must therefore carry their own marking in accordance with the individual requirements applicable. Similarly, any pulley blocks used in association with the winch must also be treated as individual items and marked accordingly.* **Additional information:** Although not required by legislation, new winches will usually be issued with a manufacturer's record of proof load testing in addition to, although possibly combined with, the EC Declaration of Conformity. This document forms an important part of the record of the winch. It should be retained & cross referenced to the winch's historical records for inspection by the Competent Person or HSE. **Information Which Should Be Exchanged Between The User & Designer Or Supplier** As winches are frequently used for miscellaneous lifting purposes, precise details of the load to be lifted and rigging arrangement to be used are not always available. In these circumstances, only a general

BS EN 14492-1 Canes – Power Driven Winches & Hoists – Part 1 Power Driven Winches. **LEEA COPSULE - Section 6**	specification can be given and this should include the following information: 1. Details of the rigging arrangement in so far as is known, eg use of pulley blocks, diverters etc. 2. Maximum load to be lifted or line pull required. 3. Winch mounting details, eg wall, floor, built into a structure. 4. Type of winch, eg worm geared, power operated. 5. Rope drum storage capacity. 6. Effective and actual length of wire rope required. 7. Details of wire rope termination, eg hook, eye. 8. Where applicable, operating speed(s). 9. Where applicable, details of the power source or number of operatives required at full load. 10. Details of any other lifting equipment and accessories required, eg pulley blocks, tripod (shearlegs). 11. Details of application in so far as is known, eg nature of load, duty cycle, whether temporary or permanent installation. 12. Special service conditions which may affect the winch or its associated equipment, eg flammable atmosphere, chemical environment, outdoor use. 13. Special safety considerations, eg positive limits to prevent overwinding, overload protection, use for man-riding applications. 14. Any special requirements for painting or protective finish. 15. Any other special requirements. It may subsequently be found that a more detailed exchange of information is necessary to ensure correct selection. Where the winch is committed to a single purpose use or is a permanent installation, this is not difficult, but similar consideration should be given to units that are to be used for multipurpose or temporary installations. For all but the simplest installations, a visit by the supplier to survey the site should always be considered as this will minimize the information exchange and reduce the chance of incorrect selection.