

# Chain Blocks & Lever Hoists

These units, often incorrectly referred to as block and tackle, are portable lifting machines, or hand hoists and now defined as hand powered lifting devices in the new DMR 18, which became effective 30 September 2015. These units are included in the DOL requirements for annual load testing by Registered LME and LMIs.

SANS 500 specifies the inspection, examination and load testing requirements for these units in use. SANS 1636 and SANS 1594 covers the manufacturing requirements for lever hoists and chain blocks respectively. It is important to note that if a supplier or OEM states that his hoist conforms to either SANS 1636 or SANS 1594, he must adhere to marking, certification and other quality requirements as specified in the respective SANS. It is also important to note that the short link, alloy steel load chain used on hoists must be calibrated and hardened to the OEM manufacturing standard and marked in accordance with the standard. Hand chain is mild steel, extra long link and calibrated to suit the hand wheel pockets.

SANS 1636 and SANS 1594 covers the manufacturing requirements for lever hoists and chain blocks respectively. *By Piet Otto, LEEASA, potto@icon.co.za*

## Cable, or wire rope pullers

Cable pullers have come a long way from its humble beginnings, which consisted mainly of blunt force or using an arrangement of pulleys and levers by the operator and other forms of leverage to pull or winch loads. Cable pullers are now offered in a variety of styles and ranges, and are easy to use, reliable and safe if used correctly!

It must be stressed that some of these units are not designed for lifting as such and can only be used for lifting if tested and properly certified for lifting by the OEM. Cheap industrial units, mainly sold in hardware stores, must also not be confused with "Tirfor" type cable pullers which are used in industry and mining for lifting and winching.

The cable puller is ideal for construction, maintenance, power utilization, cargo securement and other applications such as DIY home projects. Cable pullers are available in a variety of sizes, and with different load capacities. Similar to lever hoists, pipes may not be attached to the handle of the puller to increase leverage and only one person should operate the handle. Many cable pullers are manufactured from heavy duty steel with an automatic or notch-by-notch release mechanism and only wire rope, specified by the OEM should be used on the unit.



## Chain Blocks

Chain blocks are normally used in a production environment in a work shop, plant or mine. Manufacturers recommend that chain blocks be used for vertical lifting only and the load must never be lifted with a chain block, at an angle. Also note the difference between side loading and angular loading of hoists.

In practice chain blocks are often abused leading to damage and even failure. It is essential that price must not be the deciding factor and that only proper certified, branded and superior quality chain blocks must be used. Chain blocks must be supplied with certificates of test and must conform to a Standard, such as SANS, ISO, DIN or JIS for example and must be branded with a unique serial number and other details as required by the Standard. Modern chain blocks can be fitted with overload protection in the form of a slip clutch built in to the hand wheel to prevent overloading.

Although regarded as lifting machines and therefore only legally required to undergo thorough six monthly examinations, it is highly recommended that these units be visually inspected, at least at three monthly intervals. Inspections should be recorded, by the appointed inspector, in a proper inspection register. Chain blocks and lever hoists are typically manufactured to a factor of safety of 4:1

## Lever hoists

Lever hoists are normally used for maintenance operations and on construction sites to lift, lower, drag or tension loads. Lever hoists can be used for vertical as well as horizontal and incline lifting but the load must always be in a straight line from top to bottom hooks. The unit is operated by a handle, whereas a chain block is operated by pulling the hand chain and the operator can be positioned away from the unit, depending on the length of hand chain used. In practice lever hoists are often abused leading to damage and even failure. It is essential that price must not be the deciding factor and that only proper certified, branded and superior quality lever hoists must be used. Similar to chain blocks, lever hoists must be supplied with the same certification, marking and other requirements as stated above. Modern lever hoists can also be fitted with overload protection in the form of a slip clutch built in to the lever hoist handle to prevent overloading. Although regarded as lifting machines and therefore only legally required to undergo thorough six monthly examinations, it is highly recommended that these units be visually inspected, at least at three monthly intervals. Inspections should be recorded, by the appointed inspector, in a proper inspection register.

It is recommended that hoists are only purchased from suppliers or distributors that have been appointed by the manufacturer or his appointed agent. These units must be regarded as safety critical items and failure of sub-standard hoists can lead to injury, damage or even result in a fatality. The correct use as well as proper inspection and maintenance is also critical.





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