



Lifting Equipment Engineers Association

Guidance on hand chain blocks used at an angle to the vertical Document reference LEEA 053 edition 2 dated 10.07.13

Introduction

Arising from a considerable number of queries on this subject, the LEEA Technical Committee has decided to modify the guidance contained in the LEEA's Code of Practice for the Safe Use of Lifting Equipment (COPSULE).

The changes affect 'Appendix 1.6 - Principles for the selection and use of lifting appliances', paragraph '1A6.3.2.2 Hand operated chain blocks' as well as the specific section on hand chain blocks. They will be included in future editions of the code.

Because of the possible variety of such applications and the variety of blocks in use, the guidance cannot be specific about the range of angles or the rating of the block in use. Its purpose is to acknowledge that they are used for such applications; to point out that if such use is contrary to the manufacturer's instructions, the user must accept responsibility and take the necessary precautions; and to guide the user by setting the minimum parameters.

Background

Hand chain blocks are frequently used at an angle to the vertical for applications such as fleeting (travelling a load by transferring it from one block to another) and to provide adjustment within a slinging arrangement. Some hand chain blocks are designed for use at an angle but the instructions from most manufacturers state that they are intended for vertical use only. When use at an angle is contrary to the manufacturer's instructions, the user must carry out a risk assessment and provide adequate instructions for the application. In practice this can be done safely within certain parameters provided appropriate precautions are taken.

Selection of equipment

There are other types of hand operated lifting machines which are designed for use in any orientation, for example lever hoists and jaw winches. These types of machine are lever operated and are therefore only suitable if the operative can be in a safe and ergonomically suitable position to operate the lever. Where suitable, they should be considered in preference to a hand chain block.

When purchasing new hand chain blocks for this type of application, that information should be included in the specification provided to the supplier.

When selecting from an existing stock, in addition to the normal selection criteria, select a block suspended by a hook or other fitting which will allow the block body to align with the load chain

and consider whether it can be operated within the following parameters.

Safe use of hand operated chain blocks at an angle to the vertical

In addition to the normal safe use criteria, special precautions should be taken as follows:

- (a) Only a block suspended by a hook or equivalent fitting should be used.
- (b) The suspension point must be suitable for the line of force and of adequate strength.
- (c) The block must be free to align between the top suspension and the bottom hook.
- (d) It must be possible to operate the hand chain safely when the block is at the required angle(s).
- (e) The maximum force on the block must be calculated by someone competent for the purpose taking account of the angle(s) and must not exceed the WLL.

Additional guidance when used as part of a slinging arrangement

- (f) If the slung load is to be lifted by a power operated crane, reduce the rating of the block to allow for the higher dynamic loading likely to be imposed by the crane. This is usually a 15% de-rating.
- (g) Before lifting the slung load with the crane, always ensure that the block brake is fully closed by operating the block in the hoist direction as the last adjustment.

Remember that these parameters are the minimum and may not adequately address all the risks of a particular application.

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