

Specification for

Hand-operated chain blocks

UDC 621.861:621-219.523:620.1.001.3.3:006.3/8

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Mechanical Handling Standards Policy Committee (MHE/-) to Technical Committee MHE/5, upon which the following bodies were represented:

- British Chain Manufacturers' Association
- British Ports Federation and the National Association of Ports Employers
- Associated Offices Technical Committee
- Construction Health and Safety Group
- Department of Trade and Industry [Mechanical Engineering and Manufacturing Technology Division (Mmt)]
- Federation of Manufacturers of Construction Equipment and Cranes
- Federation of Wire Rope Manufacturers of Great Britain
- Health and Safety Executive
- Institution of Mechanical Engineers
- Lifting Equipment Engineers' Association
- Ministry of Defence
- North East Coast Institution of Engineers and Shipbuilders

This British Standard, having been prepared under the direction of the Mechanical Handling Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 29 June 1990

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First published May 1960
Second edition February 1973
Third edition June 1990

The following BSI references relate to the work on this standard:
Committee reference MHE/5
Draft for comment 87/72610 DC

ISBN 0 580 18412 9

Amendments issued since publication

Amd. No.	Date	Comments
6778	October 1991	
9106	October 1996	Indicated by a sideline in the margin

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Foreword

This British Standard has been prepared under the direction of the Mechanical Handling Standards Policy Committee. It supersedes BS 3243:1973, which is withdrawn.

The major new requirements in this standard are as follows:

- a) the introduction of a classification system broadly based on ISO 4301, published by the International Organization for Standardization (ISO);
- b) the introduction of a number of new tests.

Where chain blocks are used in conjunction with runway beams, the beams should be designed and tested in accordance with BS 2853.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

Purchasers ordering chain blocks in accordance with BS 3243 are advised to confirm in their purchasing contract that the manufacturer operates a quality system in compliance with the appropriate Part of BS 5750, or suitable equivalent, to ensure themselves that products claimed to comply with BS 3243 consistently achieve the required level of quality.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for chain blocks that require the use of a hand chain both for hoisting and for lowering. It specifies tests and marking, together with matters relating to the construction and classification of the block.

NOTE 1 Details of block classification are given in Appendix A. Information which the purchaser should supply in an enquiry or order is given in Appendix B. Recommendations for the care and safe use of chain blocks are given in Appendix C. Details of an optional torque limiting device are given in Appendix D.

NOTE 2 The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard, the following definitions apply (see also Figure 1).

2.1

hand-operated chain block

a block reeved with a short link calibrated load chain, operated by a hand chain and giving a mechanical advantage

2.2

working load limit (WLL)

the maximum mass which the block is designed to raise, lower or suspend

2.3

safe working load (SWL)

the maximum mass (as certified by a competent person) which the block may raise, lower or suspend under particular service conditions.

NOTE See clause 5 and Appendix A for selection of SWL.

2.4

suspension level

- 1) Where a block is suspended from a hook: the level of the suspending hook saddle.
- 2) Where a block is combined with a trolley: the level of the surface upon the trolley runs.

NOTE In other cases the suspension level is the appropriate level similar to those defined in 1) and 2).

2.5

drawn up dimension

the distance between the suspension level and the bottom hook saddle when the bottom hook is in the fully raised position

2.6

range of lift

the vertical distance which the bottom hook travels between extended and highest positions

2.7

extended dimension

the distance between the suspension level and the bottom hook saddle, when the bottom hook is in the extended position. It equals the sum of the drawn up dimension and the range of lift

2.8

operating level

the level on which the operator stands

2.9

representative sample block

a block representative of a production run or batch of blocks of the same type, i.e. with the same gears, brake, casing, chain, hooks, etc. but not necessarily the same range of lift

3 Construction

3.1 Brakes

Blocks shall be provided with an automatic brake capable of arresting and sustaining the load in all working positions and which permits smooth controlled lowering of all loads without serious overheating such as to impair the efficient working of the block.

3.2 Ratchet wheels and pawls

3.2.1 General

Where ratchet wheels and pawls are included in the design, they shall be designed so that they maintain full engagement as the brake pads wear.

3.2.2 Pawl operating mechanism

Either pawls shall be spring loaded or engagement with the ratchet wheel shall be ensured by other equally effective and positive means. Engagement between the pawls and ratchet wheels shall not depend either on a tension spring or on gravity alone.

3.2.3 Position of pawls

If the pawl operating mechanism fails during a vertical lift, the pawl shall be fully operated by gravity so that the load is sustained without damage to the mechanism.

3.2.4 Pawl stop

A pawl stop shall be provided and so positioned that the pawl just clears the teeth of the ratchet wheel.

3.3 Lubrication

Blocks shall be capable of being lubricated both initially and during servicing unless materials with inherent lubricating properties are used.

Advice about lubrication shall be included in the servicing instructions.