

Specification for

Ships' deck machinery — windlasses

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Foreword

This British Standard has been prepared under the authority of the Shipbuilding and Marine Industry Standards Committee and has been developed from a proposal submitted by the British Ship Research Association. It forms one of a series dealing with deck machinery for ships and provides requirements for the design, construction, safety, performance and acceptance testing of windlasses. Other standards in this series are:

- BS MA 30, *Glossary of terms and graphical symbols for ships' deck machinery.*
- BS MA 31, *Ships' deck machinery — cargo winches.*
- BS MA 32, *Ships' deck machinery — mooring winches.*
- BS MA 33, *Ships' deck machinery — warping winches.*
- BS MA 34, *Ships' deck machinery — capstans.*
- BS MA 52, *Ships' deck machinery — accommodation ladder winches.*
- BS MA 56, *Ships' deck machinery — anchor cable stoppers.*

NOTE Users of this British Standard should note that while observing requirements of the standard they should at the same time ensure compliance with such statutory requirements, rules and regulations as may be applicable to the individual ship concerned.

Certification. Attention is drawn to the certification facilities described on the last page of this standard.

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.

This British Standard, having been approved by the Shipbuilding and Marine Industry Standards Committee, was published under the authority of the Executive Board on 30 May 1975

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1 Scope

This British Standard specifies requirements for the design, construction, safety, performance and acceptance testing of ships' windlasses for a range of anchor cable diameters of 26 mm to 120 mm.

The standard does not include requirements for the prime mover used to operate the windlass.

Appendix A, Appendix B and Appendix C cover on board tests and inspections, information required from the purchaser and windlass performance calculations.

2 References

This standard makes reference to the following British Standards:

BS 1486, *Lubricating nipples — Part 1: Lubricating nipples and adaptors for use on machinery and vehicles.*

BS 1597, *Radio-interference suppression on marine installations.*

BS 1856, *General requirements for the metal-arc welding of mild steel.*

BS 2045, *Preferred numbers.*

BS 2949, *Rotating electrical machines for use in ships.*

BS 3006, *Dimensions of ships' stud link anchor cables.*

BS 3399, *Transformers for use in ships.*

BS 6883, *Elastomer-insulated cables for fixed wiring in ships.*

3 Definitions

For the purposes of this British Standard, the definitions given in BS MA 30 apply.

Terms particularly applicable to this British Standard are defined as follows:

duty pull of the windlass

the working load of the windlass measured at the cable-lifter exit when the windlass is operating at its minimum design speed

nominal size of the windlass

the nominal size is derived from the duty pull of the windlass as its design speed. It is expressed in tonnes and is the nearest lower preferred whole number to the duty pull

NOTE 1 The range of nominal sizes covered by this standard is listed in Table 1; column 1; associated duty pull is listed in Table 1, column 3.

NOTE 2 The nominal sizes of windlass in Table 1 have been selected from a modified R10 series of preferred numbers (see BS 2045).

symmetrical double cable-lifter windlass, type 1

a windlass in which the two cable lifters are provided with a single integral power source

NOTE See Figure 1, type 1.

single cable-lifter windlass, type 2

a windlass in which one cable-lifter is provided with an integral power source

NOTE See Figure 1, type 2.

single cable-lifter windlass unit, externally powered, type 3

a windlass unit, in which one cable-lifter is provided with an external power source

NOTE See Figure 1, type 3.

4 Design and construction

4.1 Handing of windlasses. Windlasses of types 2 and 3 may be designed as right-hand or left-hand models. A windlass is termed a *right-hand windlass* in relation to an observer situated on the side of the motor, power supply or controller when the reduction gear or drive for the cable-lifter is on the right-hand side of the cable-lifter.

A *left-hand windlass* when similarly observed has the reduction gear or drive for the cable-lifter on the left-hand side of the cable-lifter.

4.2 Anchor cable. This standard is based upon the use of second grade anchor cable (tensile strength 490 N/mm² to 640 N/mm²): the diameters of these cables are listed in Table 1, column 2.

4.3 Cable-lifter. Each cable-lifter shall be capable of being disengaged from the drive.

4.4 Warping ends

4.4.1 The windlass may be designed with or without warping ends.

4.4.2 Warping ends may be fitted on the intermediate shaft or on the cable-lifter shaft.

4.4.3 The minimum warping end diameters are listed in Table 1, column 7.

4.5 Material stresses. The manufacturer of the windlass shall be responsible for determining the strength requirements of the component parts of the windlass to withstand the proof loads stated in Table 1, column 5. Furthermore, the windlass shall be designed so as not to suffer collapse such as could release the cable if a load equal to the breaking load of the cable is applied to the cable. These loads are listed in Table 1, column 6.