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Shipbuilding and marine structures — Deck machinery — Vocabulary and symbols

Construction navale et structures maritimes — Auxiliaires de pont — Vocabulaire et symboles

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Foreword

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ISO 3828 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

This third edition cancels and replaces the second edition (ISO 3828:1984), which has been technically revised.

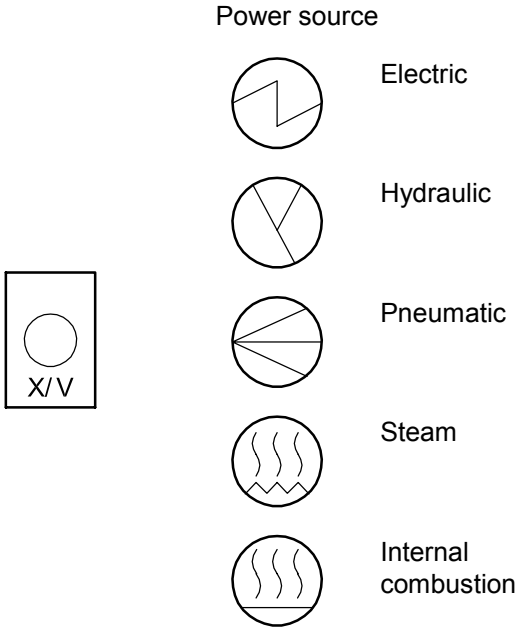
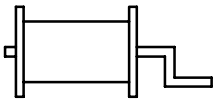
Shipbuilding and marine structures — Deck machinery — Vocabulary and symbols

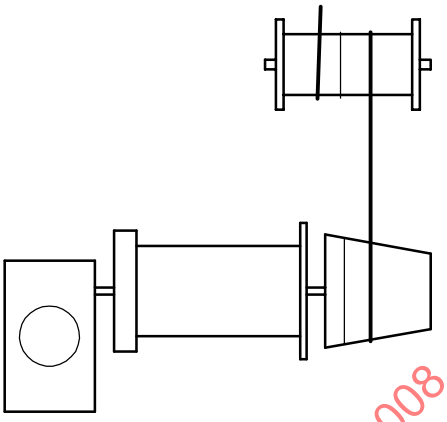
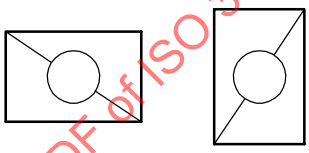
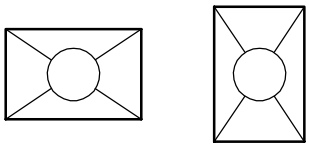
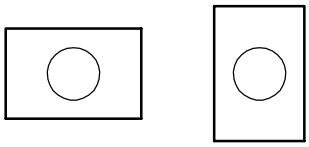
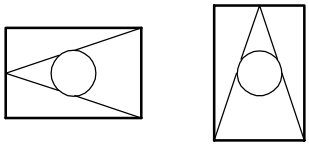
1 Scope

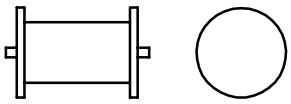
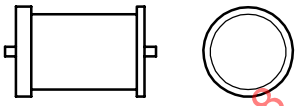
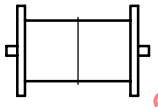
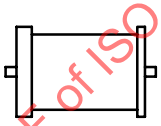
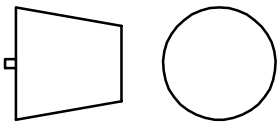
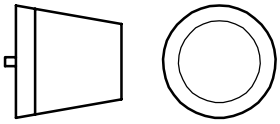
This International Standard establishes the vocabulary for the various terms in use relative to ship's deck machinery. It defines, in English, general terms used in connection with this subject, and includes specific terms associated with anchoring and mooring, cargo handling, towing, ancillary deck equipment and special deck machinery of working and oceanographic research ships.

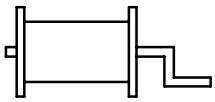
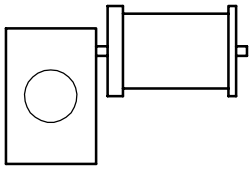
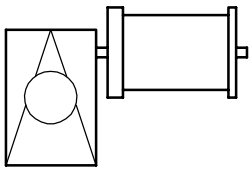
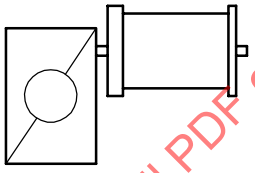
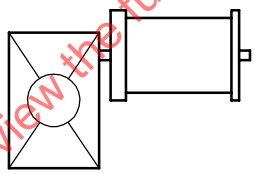
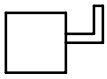
In the preparation of this vocabulary, care has been taken to standardize only suitable terms and definitions and not to perpetuate unsuitable terms because of their use in the past. The illustration given against the respective terms are purely diagrammatic and have been developed to provide for any series of combination of symbols, to represent the respective type of deck machinery.

2 General terms relating to deck machinery

Definition	Symbol
2.1 **prime mover** electric or hydraulic motor, steam engine or similar drive, acting directly on the deck machinery NOTE In a diesel electric drive, the electric motor is the prime mover.	 X: number of discrete speeds (1.2.3, etc.) or V: infinitely variable speed
2.2 **unpowered** without any means of powering, except for hand power	

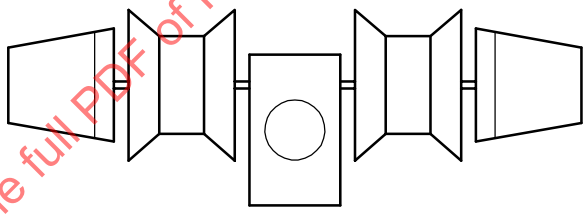
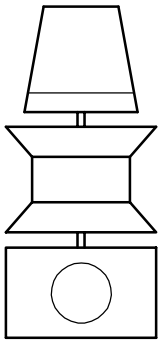
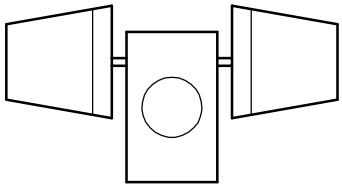
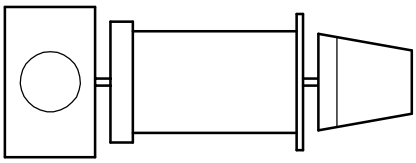
2.3 **externally powered** activated by means other than a directly connected prime mover	
2.4 **lightly powered** prime mover which is suitable only for operating the deck machinery in a light loaded condition EXAMPLE Reeling in of an untensioned rope, or topping an unloaded derrick.	Non-portable  Portable 
2.5 **fully powered** prime mover which is suitable for operating the deck machinery at its full designed load	
2.6 **non-automatic** controlled solely by hand	
2.7 **remote control** controlled from a position not integral with the machine NOTE This may be achieved by a radio-electric, electric, hydraulic, pneumatic or other link.	
2.8 **automatic** controlled without direct human intervention	

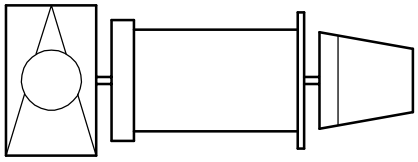
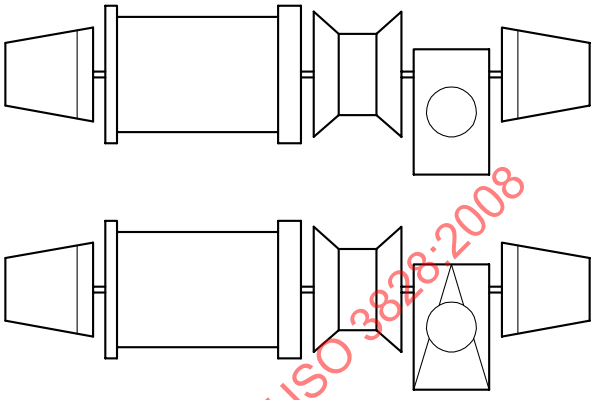
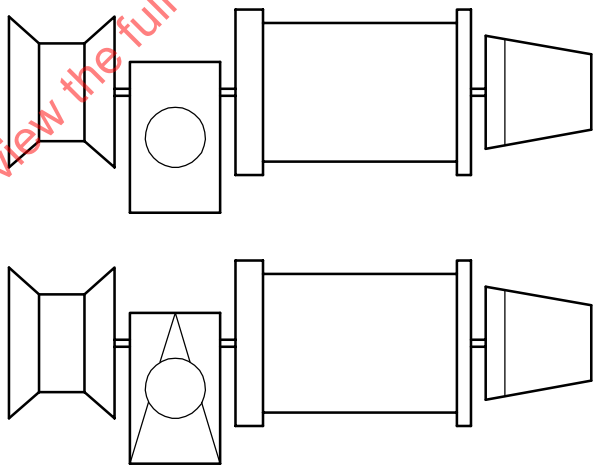
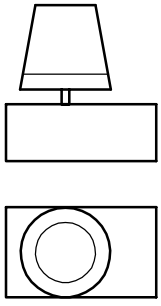
2.9 **drum** a cylinder normally flanged at both ends NOTE When used, the rope is fixed and stored on it.	Unpowered  Powered End view 
2.10 **split drum** drum normally split by a flange somewhere along its length NOTE The flange may or may not have a slot.	 Unpowered  Powered
2.11 **warping end** part similar to a drum but longitudinally concave shaped and fixed to the shaft end for hauling but not storing a rope	Unpowered  Powered 
2.12 **fleet angle** included angle between a rope and the vertical plane of the drum or warping end axial line, through the point at which the rope leaves the drum or warping end	

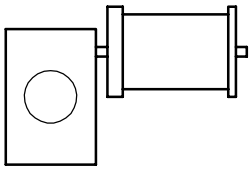
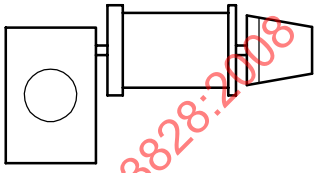
2.13 **winch** powered or unpowered machine, having one or more horizontally mounted drums and/or one or two warping end(s), on which a rope may be wound under load	 Unpowered  Fully powered  Fully powered  Lightly powered non-portable  Lightly powered portable
2.14 **controller** unit fitted with control levers, buttons, etc., as appropriate	
2.15 **nominal size** essential characteristic parameters of a machine's mechanical performance or an indication of its standing against some important technical index	
2.16 **drum load** maximum pull (kN) measured at the drum exit when the winch is hoisting or hauling in at the nominal speed with a rope wound on the drum in a single layer	
2.17 **holding load** maximum pull (kN) that can be maintained by a braking/locking system on a cable lifter or drum with a rope wound on it in a single layer	
2.18 **stalling load** maximum pull (kN) measured at the drum end when the drum ceases to rotate in the direction of applied driving torque, the prime mover being set for maximum torque and the rope being wound on the drum in a single layer	

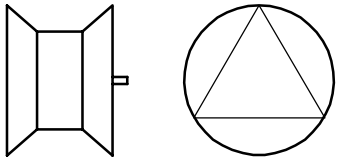
2.19 **prototype test** test applied to the first machine of a new design	
2.20 **individual test** test applied to each machine produced by a manufacturer	
2.21 **type test** a test applied to one of a batch of machines of identical design from one manufacturer	

3 Terms relating to anchoring and mooring

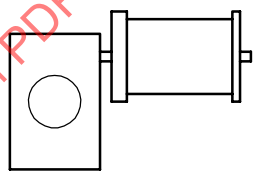
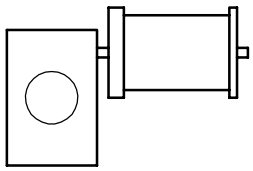
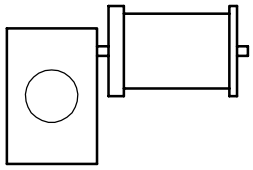
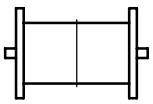
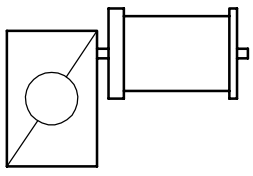
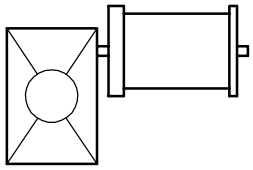
Definition	Symbol
3.1 **windlass** machine designed to drop and hoist the anchor NOTE A windlass has one or more cable lifters mounted on a horizontal shaft, each being fitted with a brake. The cable lifters are capable of being declutched from the prime mover. One or two warping ends may also be fitted.	
3.2 **anchor capstan** power-driven cable lifter mounted on a vertical shaft NOTE The vertical shaft may be extended beyond the cable lifter to carry a warping end. The cable lifter is capable of being declutched from the prime mover, and in operation and use is similar to the windlass.	
3.3 **warping winch** winch used solely for warping, on which a rope may be wound under power but not stored	
3.4 **mooring winch** winch with the ability to hold and haul a tensioned mooring rope and having a capacity for rope storage, controlled solely by hand	

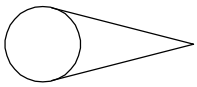
3.5 **automatic mooring winch** a mooring winch with the additional ability to haul, veer or render a mooring rope within selected limits without direct human intervention	
3.6 **combined windlass/mooring winch** machine with a common prime mover which will provide independently the functions of either a windlass or a mooring winch (automatic or non-automatic)	 **a) Cable lifter as integral part of the mechanism**  **b) Cable lifter attached to the winch**
3.7 **capstan** machine having a vertically mounted warping end on which a rope may be wound under power, but not stored	

3.8 **anchor winch** winch with the ability to drop, veer and heave an anchor that is connected by a rope, or a rope combined with a chain, and to hold and store rope NOTE The shaft may be extended beyond the drum to carry a warping end.	Without warping end  With warping end 
3.9 **nominal recovery speed** average speed of recovery of two shots of chain cable when three shots are submerged and freely suspended at commencement lifting (m/s)	
3.10 **nominal mooring speed** maximum speed (m/s) maintained by a winch when it is bearing the drum load with a rope wound on the drum in a single layer	
3.11 **light line speed** maximum speed (m/s) that a winch can maintain with a rope wound on the drum in a single layer and with negligible load on the rope NOTE Light line speed is normally not more than 10 % of the drum load.	
3.12 **creep speed** minimum uniform speed (m/s) measured on the first layer that the winch can maintain under drum load	
3.13 **recovery load** maximum rope pull (kN), measured as the drum commences to rotate in the direction of haul, the prime mover being set for maximum torque under automatic control and the rope being wound on the drum in a single layer	
3.14 **rendering load** maximum pull (kN) measured at drum exit as the drum commences to rotate in the opposite direction to the applied driving torque, the prime mover being set for maximum torque under automatic control and the rope being wound on the drum in a single layer	

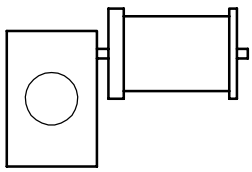
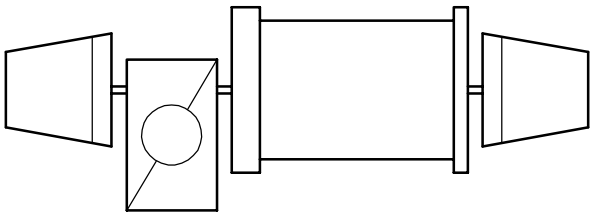
3.15 **cable lifter** deeply grooved drum shaped to engage the links of a chain cable	

4 Terms relating to cargo handling

Definition	Symbol
4.1 **derrick crane** crane with a derrick boom capable of slewing and luffing NOTE The derrick boom heel pivots by means of a goose-neck mounted at the lower part of the mast and the derrick boom head is connected to the mast top by a steel wire topping lift. The mast itself is fixed to the deck and is maintained upright.	
4.2 **cargo winch** winch used for hoisting and lowering cargo	
4.3 **slewing winch** winch having a rope storage capacity and used for slewing and retaining a boom	
4.4 **span winch** winch having a rope storage capacity and used for topping, lowering and supporting a boom whether under load or unloaded	
4.5 **topping winch** winch, frequently unpowered, having rope storage capacity and used for topping and lowering a derrick boom while the boom is unloaded and for supporting it while it is supporting a load	  

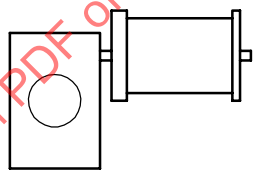
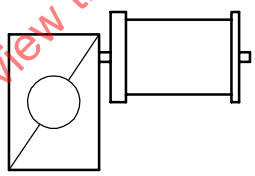
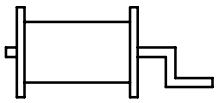
4.6 **jib crane** crane with a jib which may be rotated by turning gear and adjusted in the vertical plane	
4.7 **cantilever crane** crane with a cantilever which is incapable of luffing NOTE The cargo hook is fixed at the outer end of the cantilever, or suspended from a carriage which can move along the cantilever.	
4.8 **fold-boom crane** crane with a boom consisting of several sections, being capable of moving the weight positions though folding the boom	
4.9 **telescopic-boom crane** crane with a boom capable of luffing, whose structure consists of several coaxial sections, each section capable of extending in the axial direction and thus changing the boom length NOTE A crane may have a telescopic boom combined with an articulated boom.	
4.10 **safe working load** total allowable lifting capacity of a cargo handling system, being the sum of the weight of the cargo and sub-hook (or fittings) under design working conditions NOTE For a crane with a variable luffing capability, the safe working load is also related to the luffing capacity. Safe working loads are also related to the radius of operation of a crane.	

5 Terms relating to towing

Definition	Symbol
5.1 **towing winch** winch with one or more rope storage drums for veering out, hauling in or making-fast tow ropes	
5.2 **towing bridle winch** winch having a rope storage drum, with or without warping end, for handling the rope bridle	

5.3 **maximum bollard pull** maximum static pull (kN) produced in a vessels harbour trail, measured against a bollard	
5.4 **emergency towing gear** gear that, under emergency conditions, may be connected to a tug or other vessel so as to enable the ship to which it is fitted to be pulled away from its berth or mooring NOTE As a minimum, the gear consists of a reel, towing hawser, signal cable, buoy, wire storage box, signal lamp, etc.	

6 Terms relating to ancillary deck equipment

Definition	Symbol
6.1 **accommodation ladder winch** winch designed specifically for lowering, retaining and hoisting an accommodation ladder, and having a rope storage drum	
6.2 **rope storage reel** lightly powered or unpowered drum intended solely for rope storage	 Lightly powered  Unpowered
6.3 **fibre rope handling gear** power-operated device with one or two drums to ensure that the working part of the fibre rope is wound in no more than one layer NOTE Fibre rope handling gear can be used in conjunction with a rope storage reel.	
6.4 **hatch cover winch** winch designed specifically for opening or closing hatch covers