

SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B63 SHIPS OR OTHER WATERBORNE VESSELS; RELATED EQUIPMENT

B63H MARINE PROPULSION OR STEERING (propulsion of air-cushion vehicles B60V 1/14; specially adapted for submarines, other than nuclear propulsion, B63G; specially adapted for torpedoes F42B 19/00)

Subclass index

PROPULSIVE ELEMENTS; ARRANGEMENTS THEREOF

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PROPULSION USING AIR OR WIND

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Sail or rigging arrangements specially adapted for water sport boards.....8/00

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PARTICULAR MEANS

by water jets; by muscle power; by anchored cable; wind motors driving water-engaging devices.....11/00, 16/00, 15/00, 13/00

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PROPULSION POWER PLANT.....21/00

TRANSMISSION FROM POWER PLANT TO PROPULSIVE ELEMENTS.....23/00

STEERING, DYNAMIC ANCHORING.....25/00

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|------|---------------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1/00 | Propulsive elements directly acting on water (jet propulsion B63H 11/00) [1, 2006.01] | 1/38 | • characterised solely by flotation properties, e.g. drums [1, 2006.01] |
| 1/02 | • of rotary type [1, 2006.01] | 3/00 | Propeller-blade pitch changing [1, 2006.01] |
| 1/04 | • • with rotation axis substantially at right angles to propulsive direction, e.g. paddle wheels [1, 2006.01] | 3/02 | • actuated by control element coaxial with propeller shaft, e.g. the control element being rotary [1, 2006.01] |
| 1/06 | • • • with adjustable vanes or blades [1, 2006.01] | 3/04 | • • the control element being reciprocatable [1, 2006.01] |
| 1/08 | • • • • with cyclic adjustment [1, 2006.01] | 3/06 | • characterised by use of non-mechanical actuating means, e.g. electrical [1, 2006.01] |
| 1/10 | • • • • • with blades extending axially from a disc-shaped rotary body [1, 2006.01] | 3/08 | • • fluid [1, 2006.01] |
| 1/12 | • • with rotation axis substantially in propulsive direction [1, 2006.01] | 3/10 | • characterised by having pitch control conjoint with propulsion-plant control [1, 2006.01] |
| 1/14 | • • • Propellers (pitch changing B63H 3/00) [1, 2006.01] | 3/12 | • the pitch being adjustable only when propeller is stationary [1, 2006.01] |
| 1/15 | • • • • having vibration damping means [4, 2006.01] | 5/00 | Arrangements on vessels of propulsion elements directly acting on water [1, 2006.01] |
| 1/16 | • • • • having a shrouding ring attached to blades [1, 2006.01] | 5/02 | • of paddle wheels, e.g. of stern wheels [1, 2006.01] |
| 1/18 | • • • • with means for diminishing cavitation, e.g. supercavitation [1, 2006.01] | 5/03 | • • movably mounted with respect to the hull, e.g. having means to reposition paddle wheel assembly, or to retract paddle or to change paddle attitude [4, 2006.01] |
| 1/20 | • • • • Hubs; Blade connections [1, 2006.01] | 5/04 | • • with stationary water-guiding elements [1, 2006.01] |
| 1/22 | • • • • • the blades being foldable [1, 2006.01] | 5/07 | • of propellers (forming part of outboard propulsion units B63H 20/00) [6, 2006.01] |
| 1/24 | • • • • • • automatically foldable or unfoldable [1, 2006.01] | 5/08 | • • of more than one propeller [1, 2006.01] |
| 1/26 | • • • • Blades [1, 2006.01] | 5/10 | • • • of coaxial type, e.g. of counter-rotative type [1, 2006.01] |
| 1/28 | • • • • Other means for improving propeller efficiency [1, 2006.01] | 5/125 | • • movably mounted with respect to hull, e.g. adjustable in direction (movably mounted for steering purposes only B63H 25/42) [6, 2006.01] |
| 1/30 | • of non-rotary type [1, 2006.01] | | |
| 1/32 | • • Flaps, pistons, or the like, reciprocating in propulsive direction [1, 2006.01] | | |
| 1/34 | • • of endless-track type [1, 2006.01] | | |
| 1/36 | • • Swinging flaps, e.g. fishtail type [1, 4, 2006.01] | | |
| 1/37 | • • Moving-wave propellers, i.e. wherein the propelling means comprise a flexible undulating structure [4, 2006.01] | | |

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- 5/14 • • characterised by being mounted in non-rotating ducts or rings, e.g. adjustable for steering purposes (shrouding ring attached to blades B63H 1/16; jet propulsion B63H 11/00) [1, 2006.01]
- 5/15 • • • Nozzles, e.g. Kort-type [4, 2006.01]
- 5/16 • • characterised by being mounted in recesses; with stationary water-guiding elements; Means to prevent fouling of the propeller, e.g. guards, cages or screens [1, 2006.01]
- 5/18 • • of emergency propellers, e.g. arranged at the side of the vessel [1, 2006.01]
- 5/20 • • • movable from a working position to a non-working position [4, 2006.01]

Propulsion using air or wind [2020.01]

- 7/00 **Propulsion directly actuated on air** (jet propulsion B63H 11/00) [1, 2006.01]
- 7/02 • using propellers [1, 2006.01]
- 8/00 **Sail or rigging arrangements specially adapted for water sports boards, e.g. for windsurfing or kitesurfing [2020.01]**
- 8/10 • Kite-sails; Kite-wings; Control thereof; Safety means therefor [2020.01]
- 8/12 • • Kites with inflatable closed compartments [2020.01]
- 8/14 • • Ram-air kites, i.e. kites at least partly inflated by air entering their leading edges during use [2020.01]
- 8/16 • • Control arrangements, e.g. control bars or control lines [2020.01]
- 8/18 • • Arrangements for connecting the user to a kite-sail; Kite-safety means, e.g. chicken loops, safety leashes or quick release mechanisms [2020.01]
- 8/20 • Rigging arrangements involving masts, e.g. for windsurfing [2020.01]
- 8/21 • • Wishbones [2020.01]
- 8/22 • • for connecting wishbones to the mast [2020.01]
- 8/23 • • for tensioning or trimming the clew of the sail, e.g. outhaul trimmers [2020.01]
- 8/24 • • Arrangements for connecting the rigging to a board [2020.01]
- 8/25 • • Arrangements for connecting the sail to a mast foot, e.g. downhaul tensioners or mast foot extensions [2020.01]
- 8/40 • Arrangements for improving or maintaining the aerodynamic profile of sails, e.g. cambers, battens or foil profiles [2020.01]
- 8/50 • Accessories, e.g. repair kits or kite launching aids [2020.01]
- 8/52 • • Handheld cleats, cams or hooks for tensioning the downhaul or outhaul of a windsurfing sail [2020.01]
- 8/54 • • Arrangements for connecting the user or the harness to the wishbone, e.g. trapeze lines or handgrips [2020.01]
- 8/56 • • Devices to distribute the user's load, e.g. harnesses [2020.01]
- 8/58 • • • Spreader bars; Hook connection arrangements [2020.01]
- 8/70 • Arrangements for handling, stowing or transport thereof [2020.01]
- 9/00 **Marine propulsion provided directly by wind power** (wind-motors driving underwater propulsive elements B63H 13/00) [1, 2006.01]

- 9/02 • using Magnus effect [1, 2006.01]
- 9/04 • using sails or like wind-catching surfaces (sail or rigging arrangements specially adapted for water sports boards, e.g. for windsurfing or kitesurfing B63H 8/00) [1, 2006.01, 2020.01]
- 9/06 • • Types of sail; Constructional features of sails; Arrangements thereof on vessels [1, 2006.01, 2020.01]
- 9/061 • • • Rigid sails; Aerofoil sails [2020.01]
- 9/065 • • • Battens (for water sports board sails B63H 8/40) [2020.01]
- 9/067 • • • Sails characterised by their construction or manufacturing process [2020.01]
- 9/068 • • • Sails pivotally mounted at mast tip [2020.01]
- 9/069 • • • Kite-sails for vessels [2020.01]
- 9/071 • • • • for use in combination with other propulsion means, e.g. for improved fuel economy [2020.01]
- 9/072 • • • • Control arrangements, e.g. for launching or recovery [2020.01]
- 9/08 • • Connections of sails to masts, spars, or the like [1, 2006.01]
- 9/10 • • • Spars; Running rigging, e.g. reefing equipment (staying of masts B63B 15/02) [1, 2006.01]

11/00 Marine propulsion by water jets [1, 2006.01]

- 11/01 • having means to prevent foreign material from clogging fluid passageway [4, 2006.01]
- 11/02 • the propulsive medium being ambient water [1, 2006.01]
- 11/04 • • by means of pumps [1, 2006.01]
- 11/06 • • • of reciprocating type [1, 2006.01]
- 11/08 • • • of rotary type [1, 2006.01]
- 11/09 • • • by means of pressure pulses applied to a column of liquid, e.g. by ignition of an air/gas or vapour mixture [4, 2006.01]
- 11/10 • • having means for deflecting jet or influencing cross-section thereof [1, 2006.01]
- 11/103 • • • having means to increase efficiency of propulsive fluid, e.g. discharge pipe provided with means to improve the fluid flow [4, 2006.01]
- 11/107 • • • Direction control of propulsive fluid [4, 2006.01]
- 11/11 • • • • with bucket or clamshell-type reversing means [4, 2006.01]
- 11/113 • • • • Pivoted outlet [4, 2006.01]
- 11/117 • • • • Pivoted vane [4, 2006.01]
- 11/12 • the propulsive medium being steam or other gas [1, 2006.01]
- 11/14 • • the gas being produced by combustion [1, 2006.01]
- 11/16 • • the gas being produced by other chemical processes [1, 2006.01]

13/00 Marine propulsion by wind motors driving water-engaging propulsive elements [1, 2006.01]

15/00 Marine propulsion by use of vessel-mounted driving mechanisms co-operating with anchored chains or the like [1, 2006.01]

16/00 Marine propulsion by muscle power [1, 2006.01]

- 16/02 • Movable thwarts; Foot-rests [1, 2006.01]
- 16/04 • Oars; Sculls; Paddles; Poles [1, 2006.01]

16/06	• Rowlocks; Mountings therefor [1, 2006.01]		
16/067	• • Rowlocks mounted on a structure extending beyond the gunwale of the vessel [4, 2006.01]		
16/073	• • having oar shaft restraining means [4, 2006.01]		
16/08	• Other apparatus for converting muscle power into propulsive effort [1, 2006.01]		
16/10	• • for bow-facing rowing [1, 2006.01]	21/02	• the vessels being steam-driven (B63H 21/18 takes precedence) [1, 2006.01]
16/16	• • using reciprocating pull cable, i.e. a strand-like member movable alternately backward and forward [4, 2006.01]	21/04	• • relating to positive-displacement steam engines [1, 2006.01]
16/18	• • using sliding handle or pedal, i.e. the motive force being transmitted to a propelling means by means of a lever operated by the hand or foot of the occupant [4, 2006.01]	21/06	• • relating to steam turbines [1, 2006.01]
16/20	• • using rotary cranking arm [4, 2006.01]	21/08	• • relating to steam boilers [1, 2006.01]
		21/10	• • relating to condensers or engine-cooling fluid heat-exchangers [1, 2006.01]
19/00	Marine propulsion not otherwise provided for [1, 2006.01]	21/12	• the vessels being motor-driven (B63H 21/175, B63H 21/18 take precedence) [1, 4, 2006.01]
19/02	• by using energy derived from movement of ambient water, e.g. from rolling or pitching of vessels [1, 2006.01]	21/14	• • relating to internal-combustion engines [1, 2006.01]
19/04	• • propelled by water current [1, 2006.01]	21/16	• • relating to gas turbines [1, 2006.01]
19/06	• by discharging gas into ambient water [1, 2006.01]	21/165	• • by hydraulic fluid motor, i.e. wherein a liquid under pressure is utilised to rotate the propelling means [4, 2006.01]
19/08	• by direct engagement with water-bed or ground [1, 2006.01]	21/17	• • by electric motor [4, 2006.01]
		21/175	• the vessel being powered by land vehicle supported by vessel [4, 2006.01]
20/00	Outboard propulsion units, e.g. outboard motors or Z-drives; Arrangements thereof on vessels [6, 2006.01]	21/18	• the vessels being powered by nuclear energy [1, 2006.01]
20/02	• Mounting of propulsion units (B63H 20/08 takes precedence) [6, 2006.01]	21/20	• the vessels being powered by combinations of different types of propulsion units [1, 2006.01]
20/04	• • in a well [6, 2006.01]	21/21	• Control means for engine or transmission, specially adapted for use on marine vessels [4, 2006.01]
20/06	• • on an intermediate support [6, 2006.01]	21/22	• the propulsion power units being controlled from exterior of engine room, e.g. from navigation bridge; Arrangements of order telegraphs [1, 2006.01]
20/08	• Means enabling movement of the position of the propulsion element, e.g. for trim, tilt or steering; Control of trim or tilt (initiating means for steering B63H 25/02) [6, 2006.01]	21/30	• Mounting of propulsion plant or unit, e.g. for anti-vibration purposes (hull reinforcements therefor B63B 3/70) [1, 2006.01]
20/10	• • Means enabling trim or tilt, or lifting of the propulsion element when an obstruction is hit; Control of trim or tilt [6, 2006.01]	21/32	• Arrangements of propulsion power-unit exhaust uptakes; Funnels peculiar to vessels [1, 2006.01]
20/12	• • Means enabling steering [6, 2006.01]	21/34	• • having exhaust-gas deflecting means [1, 2006.01]
20/14	• Transmission between propulsion power unit and propulsion element [6, 2006.01]	21/36	• Covers or casing arranged to protect plant or unit from marine environment [4, 2006.01]
20/16	• • allowing movement of the propulsion element in a horizontal plane only, e.g. for steering [6, 2006.01]	21/38	• Apparatus or methods specially adapted for use on marine vessels, for handling power plant or unit liquids, e.g. lubricants, coolants, fuels or the like [4, 2006.01]
20/18	• • allowing movement of the propulsion element about a longitudinal axis, e.g. the through transom shaft (B63H 20/22 takes precedence) [6, 2006.01]		
20/20	• • with provision for reverse drive [6, 2006.01]	23/00	Transmitting power from propulsion power plant to propulsive elements (adaptation of transmission to allow adjustment in direction of propellers B63H 5/125; transmission between wind motors and propulsive elements B63H 13/00, in outboard propulsion units B63H 20/14; adaptation of transmission to allow adjustment of location of propellers B63H 20/08) [1, 2006.01]
20/22	• • allowing movement of the propulsion element about at least a horizontal axis without disconnection of the drive, e.g. using universal joints [6, 2006.01]	23/02	• with mechanical gearing [1, 2006.01]
20/24	• Exhaust gas outlets [6, 2006.01]	23/04	• • the main transmitting element, e.g. shaft, being substantially vertical [1, 2006.01]
20/26	• • passing through the propeller or its hub [6, 2006.01]	23/06	• • for transmitting drive from a single propulsion power unit [1, 2006.01]
20/28	• Cooling-water intakes [6, 2006.01]	23/08	• • • with provision for reversing drive [1, 2006.01]
20/30	• • for flushing [6, 2006.01]	23/10	• • for transmitting drive from more than one propulsion power unit [1, 2006.01]
20/32	• Housings [6, 2006.01]	23/12	• • • allowing combined use of the propulsion power units [1, 2006.01]
20/34	• • comprising stabilising fins [6, 2006.01]	23/14	• • • with unidirectional drive or where reversal is immaterial [1, 2006.01]
20/36	• Transporting or testing stands; Protection of power legs [6, 2006.01]		
21/00	Use of propulsion power plant or units on vessels [1, 6, 2006.01]		

Note(s)

This group covers:

- arrangements of propulsion power plant or units on vessels;
- to some extent, adaptations of such plant or units to facilitate such arrangements.

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- 23/16 • • • characterised by provision of reverse drive [1, 2006.01]
- 23/18 • • • for alternative use of the propulsion power units [1, 2006.01]
- 23/20 • • • with separate forward and astern propulsion power units, e.g. turbines [1, 2006.01]
- 23/22 • with non-mechanical gearing [1, 2006.01]
- 23/24 • • electric [1, 2006.01]
- 23/26 • • fluid [1, 2006.01]
- 23/28 • with synchronisation of propulsive elements [1, 2006.01]
- 23/30 • characterised by use of clutches [1, 2006.01]
- 23/32 • Other parts [1, 2006.01]
- 23/34 • • Propeller shafts; Paddle-wheel shafts; Attachment of propellers on shafts [1, 2006.01]
- 23/35 • • • Shaft braking or locking, i.e. means to slow or stop the rotation of the propeller shaft or to prevent the shaft from initial rotation [4, 2006.01]
- 23/36 • • Shaft tubes [1, 2006.01]
- 25/00 Steering; Slowing-down otherwise than by use of propulsive elements (using movably-installed outboard propulsion units B63H 20/00); Dynamic anchoring, i.e. positioning vessels by means of main or auxiliary propulsive elements [1, 2006.01]**
- 25/02 • Initiating means for steering [1, 2006.01]
- 25/04 • • automatic, e.g. reacting to compass [1, 2006.01]
- 25/06 • Steering by rudders (by rudders carrying propellers B63H 25/42) [1, 2006.01]
- 25/08 • • Steering gear [1, 2006.01]
- 25/10 • • • with mechanical transmission [1, 2006.01]
- 25/12 • • • with fluid transmission [1, 2006.01]
- 25/14 • • • power assisted; power driven, i.e. using steering engine [1, 2006.01]
- 25/16 • • • • with alternative muscle or power-operated steering [1, 2006.01]
- 25/18 • • • • Transmitting of movement of initiating means to steering engine [1, 2006.01]
- 25/20 • • • • • by mechanical means [1, 2006.01]
- 25/22 • • • • • by fluid means [1, 2006.01]
- 25/24 • • • • • by electrical means [1, 2006.01]
- 25/26 • • • • • Steering engines [1, 2006.01]
- 25/28 • • • • • of fluid type [1, 2006.01]
- 25/30 • • • • • • hydraulic [1, 2006.01]
- 25/32 • • • • • • steam [1, 2006.01]
- 25/34 • • • • • Transmitting of movement of engine to rudder, e.g. using quadrants, brakes [1, 2006.01]
- 25/36 • • Rudder-position indicators [1, 2006.01]
- 25/38 • • Rudders [1, 2006.01]
- 25/40 • • • using Magnus effect [1, 2006.01]
- 25/42 • Steering or dynamic anchoring by propulsive elements (by jets B63H 25/46); Steering or dynamic anchoring by propellers used therefor only; Steering or dynamic anchoring by rudders carrying propellers [1, 2, 2006.01]
- 25/44 • Steering or slowing-down by extensible flaps or the like [1, 2006.01]
- 25/46 • Steering or dynamic anchoring by jets [1, 2, 2006.01]
- 25/48 • Steering or slowing-down by deflection of propeller slip-stream otherwise than by rudder [1, 2006.01]
- 25/50 • Slowing-down means not otherwise provided for [1, 2006.01]
- 25/52 • Parts for steering not otherwise provided for [1, 2006.01]