

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; peculiar to submarines, other than nuclear propulsion, B63G; peculiar to torpedoes F42B 19/00)

Subclass index

PROPULSIVE ELEMENTS; ARRANGEMENTS THEREOF

Acting directly on water: elements; arrangements.....1/00, 3/00, 5/00
 Arrangements of means acting directly on air.....7/00
 Acted on by wind propulsive devices.....9/00

PARTICULAR MEANS

by reaction; by muscle power; by anchored cable; wind motors driving water-engaging devices.....11/00, 16/00, 15/00, 13/00
 Other.....19/00

OUTBOARD PROPULSION UNITS.....20/00

PROPULSION POWER PLANT.....21/00

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

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

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| <p>1/00 Propulsive elements directly acting on water (jet propulsion B63H 11/00; attachment of propellers on shafts B63H 23/34) [1, 2006.01]</p> <p>1/02 • of rotary type (endless-track type B63H 1/34) [1, 2006.01]</p> <p>1/04 • • with rotation axis substantially at right angles to propulsive direction, e.g. paddle wheels [1, 2006.01]</p> <p>1/06 • • • with adjustable vanes or blades [1, 2006.01]</p> <p>1/08 • • • • with cyclic adjustment [1, 2006.01]</p> <p>1/10 • • • • • with blades extending axially from a disc-shaped rotary body [1, 2006.01]</p> <p>1/12 • • with rotation axis substantially in propulsive direction [1, 2006.01]</p> <p>1/14 • • • Propellers (pitch changing B63H 3/00) [1, 2006.01]</p> <p>1/15 • • • • having vibration damping means (anti-vibration mounting of propulsion plant B63H 21/30; means for damping vibration in general F16F) [4, 2006.01]</p> <p>1/16 • • • • having a shrouding ring attached to blades [1, 2006.01]</p> <p>1/18 • • • • with means for diminishing cavitation, e.g. supercavitation [1, 2006.01]</p> <p>1/20 • • • • Hubs; Blade connections [1, 2006.01]</p> <p>1/22 • • • • • the blades being foldable [1, 2006.01]</p> <p>1/24 • • • • • • automatically foldable or unfoldable [1, 2006.01]</p> <p>1/26 • • • • • Blades [1, 2006.01]</p> <p>1/28 • • • • • Other means for improving propeller efficiency (water-guiding elements formed by shape of hull B63H 5/00) [1, 2006.01]</p> <p>1/30 • of non-rotary type [1, 2006.01]</p> <p>1/32 • • Flaps, pistons, or the like, reciprocating in propulsive direction [1, 2006.01]</p> <p>1/34 • • of endless-track type [1, 2006.01]</p> <p>1/36 • • Swinging flaps, e.g. fishtail type [1, 4, 2006.01]</p> | <p>1/37 • • Moving-wave propellers, i.e. wherein the propelling means comprise a flexible undulating structure [4, 2006.01]</p> <p>1/38 • characterised solely by flotation properties, e.g. drums [1, 2006.01]</p> <p>3/00 Propeller-blade pitch changing [1, 2006.01]</p> <p>3/02 • actuated by control element coaxial with propeller shaft, e.g. the control element being rotary [1, 2006.01]</p> <p>3/04 • • the control element being reciprocatable [1, 2006.01]</p> <p>3/06 • characterised by use of non-mechanical actuating means, e.g. electrical [1, 2006.01]</p> <p>3/08 • • fluid [1, 2006.01]</p> <p>3/10 • characterised by having pitch control conjoint with propulsion-plant control [1, 2006.01]</p> <p>3/12 • the pitch being adjustable only when propeller is stationary [1, 2006.01]</p> <p>5/00 Arrangements on vessels of propulsion elements directly acting on water [1, 2006.01]</p> <p>5/02 • of paddle wheels, e.g. of stern wheels [1, 2006.01]</p> <p>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]</p> <p>5/04 • • with stationary water-guiding elements [1, 2006.01]</p> <p>5/07 • of propellers (forming part of outboard propulsion units B63H 20/00) [6, 2006.01]</p> <p>5/08 • • of more than one propeller [1, 2006.01]</p> <p>5/10 • • • of coaxial type, e.g. of counter-rotative type [1, 2006.01]</p> <p>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]</p> |
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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 (anti-fouling paints C09D 5/16) [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]
- 7/00 **Arrangements of propulsive devices directly acting on air** (jet propulsion B63H 11/00) [1, 2006.01]
- 7/02 • using propellers (air-screws of aircraft type B64C) [1, 2006.01]
- 9/00 **Propulsive devices directly acted on by wind; Arrangements thereof** (air-driven propellers 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 (sailing sledges or ice boats B62B 15/00) [1, 2006.01]
- 9/06 • • Construction or types of sails; Arrangements thereof on vessels [1, 2006.01]
- 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 **Effecting propulsion by jets, i.e. reaction principle** (steering by jet action B63H 25/46; power plant per se, see the relevant classes) [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 **Effecting propulsion by wind motors driving water-engaging propulsive elements** [1, 2006.01]
- 15/00 **Effecting propulsion by use of vessel-mounted driving mechanisms co-operating with anchored chains or the like** [1, 2006.01]
- 16/00 **Effecting propulsion by muscle power** (swimming frameworks with swimmer-operated driving mechanisms A63B 35/00; land-based training equipment for rowing or sculling A63B 69/06) [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 (general features of propulsion elements, see the relevant groups) [1, 2006.01]
- 16/10 • • for bow-facing rowing [1, 2006.01]
- 16/16 • • using reciprocating pull cable, i.e. a strand-like member movable alternately backward and forward [4, 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]
- 16/20 • • using rotary cranking arm [4, 2006.01]
- 19/00 **Effecting propulsion of vessels, not otherwise provided for** [1, 2006.01]
- 19/02 • by using energy derived from movement of ambient water, e.g. from rolling or pitching of vessels [1, 2006.01]
- 19/04 • • propelled by water current [1, 2006.01]
- 19/06 • by discharging gas into ambient water (with jet action B63H 11/12; for reducing surface friction B63B 1/38) [1, 2006.01]
- 19/08 • by direct engagement with water-bed or ground [1, 2006.01]
- 20/00 **Outboard propulsion units, i.e. propulsion units having a substantially vertical power leg mounted outboard of a hull and terminating in a propulsion element, e.g. "outboard motors", Z-drives** (power plants per se, see the relevant classes); **Arrangements thereof on vessels** [6, 2006.01]
- 20/02 • Mounting of propulsion units (B63H 20/08 takes precedence) [6, 2006.01]
- 20/04 • • in a well [6, 2006.01]
- 20/06 • • on an intermediate support [6, 2006.01]
- 20/08 • Means enabling movement of the position of the propulsion element, e.g. for trim, tilt, or steering (transmissions allowing movement of the propulsion element B63H 20/14); Control of trim or tilt (initiating means for steering B63H 25/02) [6, 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]
- 20/12 • • Means enabling steering [6, 2006.01]
- 20/14 • Transmission between propulsion power unit and propulsion element [6, 2006.01]
- 20/16 • • allowing movement of the propulsion element in a horizontal plane only, e.g. for steering [6, 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]

- 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]
- 20/24 • Exhaust gas outlets [6, 2006.01]
- 20/26 • • passing through the propeller or its hub [6, 2006.01]
- 20/28 • Cooling-water intakes [6, 2006.01]
- 20/30 • • for flushing [6, 2006.01]
- 20/32 • Housings [6, 2006.01]
- 20/34 • • comprising stabilising fins [6, 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** (use of outboard propulsion units B63H 20/00; hull reinforcements for carrying propulsion power plant or units B63B 3/70; propulsion power plant or units per se, see the relevant classes) [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.
- 21/02 • the vessels being steam-driven (B63H 21/18 takes precedence) [1, 2006.01]
- 21/04 • • relating to positive-displacement steam engines [1, 2006.01]
- 21/06 • • relating to steam turbines [1, 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]
- 21/12 • the vessels being motor-driven (B63H 21/175, B63H 21/18 take precedence) [1, 4, 2006.01]
- 21/14 • • relating to internal-combustion engines [1, 2006.01]
- 21/16 • • relating to gas turbines [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]
- 21/17 • • by electric motor (electrically-propelled vehicles B60L) [4, 2006.01]
- 21/175 • the vessel being powered by land vehicle supported by vessel [4, 2006.01]
- 21/18 • the vessels being powered by nuclear energy [1, 2006.01]
- 21/20 • the vessels being powered by combinations of different types of propulsion units [1, 2006.01]
- 21/21 • Control means for engine or transmission, specially adapted for use on marine vessels [4, 2006.01]
- 21/22 • the propulsion power units being controlled from exterior of engine room, e.g. from navigation bridge; Arrangements of order telegraphs (order telegraphs per se G08B 9/00) [1, 2006.01]
- 21/30 • Mounting of propulsion plant or unit, e.g. for anti-vibration purposes (hull reinforcements therefor B63B 3/70; vibration-dampers, suppression of vibration in systems F16F; engine beds F16M) [1, 2006.01]
- 21/32 • Arrangements of propulsion power-unit exhaust uptakes; Funnels peculiar to vessels (engine exhausts in general F01N; flue devices for furnaces in general F23J) [1, 2006.01]
- 21/34 • • having exhaust-gas deflecting means [1, 2006.01]
- 21/36 • Covers or casing arranged to protect plant or unit from marine environment (hull construction B63B 3/00) [4, 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]
- 23/00 Transmitting power from propulsion power plant to propulsive elements** (changing pitch of propellers B63H 3/00; 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; for vehicles in general B60K; driving auxiliary machinery B63J; transmission elements per se F16) [1, 2006.01]
- 23/02 • with mechanical gearing [1, 2006.01]
- 23/04 • • the main transmitting element, e.g. shaft, being substantially vertical [1, 2006.01]
- 23/06 • • for transmitting drive from a single propulsion power unit [1, 2006.01]
- 23/08 • • • with provision for reversing drive [1, 2006.01]
- 23/10 • • for transmitting drive from more than one propulsion power unit (for synchronisation of propulsive elements B63H 23/28) [1, 2006.01]
- 23/12 • • • allowing combined use of the propulsion power units [1, 2006.01]
- 23/14 • • • with unidirectional drive or where reversal is immaterial [1, 2006.01]
- 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 (shafts in general F16C; attachment of a member on a shaft in general F16D 1/06) [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 (propeller-shaft tunnels B63B 11/06; shaft-tube seals F16J) [1, 2006.01]
- 25/00 Steering; Slowing-down otherwise than by use of propulsive elements** (using adjustably-mounted propeller ducts or rings for steering B63H 5/14; using movably-installed outboard propulsion units B63H 20/00); **Dynamic anchoring, i.e. positioning vessels by means of main or auxiliary propulsive elements** (anchoring, other than dynamic, B63B 21/00; equipment to decrease pitch, roll, or like unwanted vessel movements by auxiliary jets or propellers B63B 39/08) [1, 2006.01]
- 25/02 • Initiating means for steering [1, 2006.01]
- 25/04 • • automatic, e.g. reacting to compass [1, 2006.01]

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- 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 (stern posts B63B 3/40) **[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]**