

CLAIMS

1. A thrust assembly (1) for propelling a vessel (100), the thrust assembly (1) comprising:
- 5 • a pump (2) for generating a first flow (f_1) of sea water, wherein the pump (2) comprises a pump inlet (2a) and a pump outlet (2b), and
 - 10 • an ejector (3) comprising a suction inlet (4) configured for suction of a second flow (f_2) of sea water, a motive inlet (5) connected to the pump outlet (2b) for receiving the first flow (f_1) of sea water from the pump (2), an outlet section (6) comprising an ejector outlet (6a) configured for discharging a third flow (f_3) of sea water, a nozzle (7) arranged downstream the motive inlet (5), and a diffuser (8) arranged in the outlet section (6) downstream the nozzle (7),
- wherein the outlet section (6) is configured to mix the first flow (f_1) of sea water with the second flow (f_2) of sea water to generate a third flow (f_3) of sea water, the diffuser (8) being configured to increase a pressure of the third flow (f_3) of sea water downstream the diffuser (8).
- 15
2. The thrust assembly (1) according to claim 1, wherein the nozzle (7) includes a nozzle outlet (7a) centrally arranged in the outlet section (6).
3. The thrust assembly (1) according to any one of the previous claims, wherein the nozzle (7) is a ring nozzle including a nozzle outlet (7b) arranged around a circumference of the outlet section (6).
- 20
4. The thrust assembly (1) according to any one of the previous claims, wherein a capacity of the pump (2) is in the range of 2,000 to 3,000 m³/h at a pressure of 9 to 11 bar.
- 25
5. The thrust assembly (1) according to any one of the previous claims, wherein an inner diameter of the suction inlet (4) and/or the outlet section (6) of the ejector (3) is in the range of 350-550 mm.

6. The thrust assembly (1) according to any one of the previous claims, wherein a length of the ejector (3) from the suction inlet (4) to the ejector outlet (6a) is in the range of 2000-3500 mm.
- 5 7. The thrust assembly (1) according to any one of the previous claims, wherein the pump (2) is configured to provide a flow of sea water to a fire-fighting system (11) of the vessel (100).
- 10 8. The thrust assembly (1) according to claim 7, wherein the thrust assembly (1) comprises a distribution valve (12) arranged in the pump outlet (2b) of the pump (2), wherein the distribution valve (12) is configured to allow the first flow of sea water (f_1) to be directed towards the ejector (3) and/or the fire-fighting system (11).
9. The thrust assembly (1) according to claim 8, wherein the distribution valve (12) is configured to be remotely operated.
- 15 10. A vessel (100) comprising a thrust assembly (1) for propelling the vessel (100) according to any one of the claims 1 to 9, wherein
 - the suction inlet (4) of the ejector (3) is arranged below a waterline of the vessel (100) and in fluid connection with sea water surrounding the vessel (100), so that sea water surrounding the vessel (100) is sucked into the ejector (3) through the suction inlet (4) in the second flow (f_2), and
 - 20 • the outlet (6a) of the ejector (3) is arranged below the waterline of the vessel (100) and in fluid connection with the sea water surrounding the vessel (100), so that the third flow (f_3) of sea water discharged through the ejector outlet (6a) creates a thrust force on the sea water surrounding the vessel (100).
- 25 11. The vessel (100) according to claim 10, wherein the vessel (100) comprises a fire-fighting system (11) and wherein the pump (2) is configured to provide a flow of water to the fire-fighting system (11).
12. The vessel (100) according to claim 10 or 11, wherein the vessel (100) comprises a main propulsion unit (10), and wherein the thrust assembly (1) is configured to

operate as a secondary propulsion unit for providing additional thrust to the vessel (100).

13. The vessel (100) according to claim 12, wherein the main propulsion unit (10) comprises a main engine and a propeller.

5 14. The vessel (100) according to any one of the claims 10 to 13, wherein the vessel (100) comprises an auxiliary engine for driving the pump (2).

10 15. The vessel (100) according to any one of the claims 10 to 14, wherein the inlet (2a) of the pump (2) is arranged below a waterline of the vessel (100) and in fluid connection with the sea water surrounding the vessel (100), so that sea water surrounding the vessel (100) is pumped to generate the first flow (f_1) of sea water.

15 16. The vessel (100) according to any one of the claims 10 to 15, wherein the thrust assembly (1) comprises a distribution valve (12) arranged in the pump outlet (2b) of the pump (2) and the distribution valve (12) is remotely operable from a wheelhouse (101) of the vessel (100).