Title (en)

AUTO-ADJUSTABLE BUOYANCY PRESSURE VESSEL FOR SCUBA

Title (de)

AUTOMATISCH EINSTELLBARER SCHWIMMDRUCKBEHÄLTER FÜR EIN UNTERWASSERATEMGERÄT

Title (fr)

RÉCIPIENT SOUS PRESSION DE FLOTTABILITÉ RÉGLABLE AUTOMATIQUEMENT POUR SCAPHANDRE AUTONOME

Publication

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Application

EP 19851612 A 20190821

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Abstract (en)

[origin: WO2020041481A1] SCUBA diving equipment is composed of a heavy SCUBA pressure vessel, buoyancy compensation device and a heavy weight system. Together with a constricting exposure suit the current setup makes for a rather cumbersome system. Perfect buoyancy is a term used in SCUBA diving to describe the ability of the diver to maintain its vertical position in the water column. Doing so requires a thorough understanding of the governing physics principles as well as considerable practice time. Together, the cumbersome nature of standard SCUBA systems and the physical and mental requirements of operating said systems underwater are a commercial hurdle, preventing many individuals from entering the sport. The present invention provides systems that can significantly simplify both elements by allowing water to occupy some of the pressure vessel internal volume. Such a pressure vessel can be used as both the breathing gas source as well as a buoyancy control device, reducing or even eliminating the need for additional weights and a separate buoyancy compensation device. Embodiments of the present invention also comprise a control system and one or more sensors to provide an automatic buoyancy system.

IPC 8 full level

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CPC (source: EP)

B63C 11/22 (2013.01); **B63C 11/2245** (2013.01)

Citation (search report)

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- [Y] US 2018170486 A1 20180621 - SINCLAIR ANDREW [GB], et al
- [A] VALENKO DARKO ET AL: "Dynamic model of scuba diver buoyancy", OCEAN ENGINEERING, PERGAMON, AMSTERDAM, NL, vol. 117, 31 March 2016 (2016-03-31), pages 188 - 198, XP029521508, ISSN: 0029-8018, DOI: 10.1016/J.OCEANENG.2016.03.041
- See also references of WO 2020041481A1

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