

Title (en)

LIGHTWEIGHT COMPOSITE OVERWRAPPED ACCUMULATORS

Title (de)

MIT LEICHTGEWICHTIGEM VERBUNDSTOFF UMWICKELTE AKKUMULATOREN

Title (fr)

ACCUMULATEURS ENVELOPPÉS COMPOSITES LÉGERS

Publication

**EP 3904698 A1 20211103 (EN)**

Application

**EP 20195115 A 20200908**

Priority

US 202016864030 A 20200430

Abstract (en)

The present invention provides lightweight high-pressure accumulators that avoids diaphragm failure observed in conventional diaphragm accumulators. Lightweight high-pressure composite overwrapped accumulators of the invention are made from a plurality of hollow casings that are mated to form an accumulator housing. The accumulator housing is overwrapped with a composite material to provide additional mechanical strength and structural integrity. More significantly, the accumulators of the invention includes a plurality of annular grooves and a plurality of bulb on the flexible diaphragm such that the plurality of bulbs on the flexible diaphragm are placed in the plurality of annular grooves that are formed between the first and the second hollow casing. In this manner, diaphragm failure is significantly reduced or even completely eliminated during repeated high pressure charge/discharge cycle of the accumulator.

IPC 8 full level

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Citation (search report)

- [Y] EP 2202412 A1 20100630 - HYDAC TECHNOLOGY GMBH [DE]
- [Y] WO 2018119481 A1 20180628 - STEELHEAD COMPOSITES LLC [US]
- [Y] US 4162692 A 19790731 - GREER EDWARD M [US], et al
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