

Title (en)

PIEZOELECTRIC CERAMIC AIR PUMP AND CONSTRUCTION METHOD THEREOF

Title (de)

PIEZOELEKTRISCHE KERAMISCHE LUFTPUMPE UND KONSTRUKTIONSVERFAHREN DAFÜR

Title (fr)

POMPE À AIR EN CÉRAMIQUE PIÉZOÉLECTRIQUE ET SON PROCÉDÉ DE FABRICATION

Publication

EP 3306090 B1 20200108 (EN)

Application

EP 16887181 A 20160129

Priority

CN 2016072799 W 20160129

Abstract (en)

[origin: EP3306090A1] A piezoelectric ceramic air pump comprises: a pump body, a piezoelectric ceramic crystal diaphragm, and air inlet and output valves, the piezoelectric ceramic crystal diaphragm being co-central-axially mounted on the pump body to construct a working pump chamber for the piezoelectric ceramic air pump; wherein the pump body is approximately tubular, with the diameter being much greater than the axial length, and air inlet and outlet ports configured to communicate the working pump chamber with an external air passage are arranged at a position of a peripheral wall of the pump body; an air inlet and outlet component respectively laminates the air inlet and outlet valves onto the air inlet and outlet ports, such that the air inlet and outlet holes are in communication with the air inlet and outlet valves and the air inlet and outlet ports to form air inlet and outlet passages in communication with the external air passage. The air inlet and outlet ports on the side wall of the pump body help to simplify the air inlet and outlet passages for communication between the working pump chamber and the external fluid, shorten the pipeline in which the fluid flows, reduce the resistance of the pipeline, decrease the volume of the dead cavity, and improve the efficiency of fluid pumping. The number of piezoelectric ceramic crystal diaphragms may be flexibly set to one or two according to the flow rate in practice, and a lot of components are shared in the piezoelectric ceramic air pump, thereby lowering the cost of manufacturing air pumps with different powers.

IPC 8 full level

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CPC (source: EP US)

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