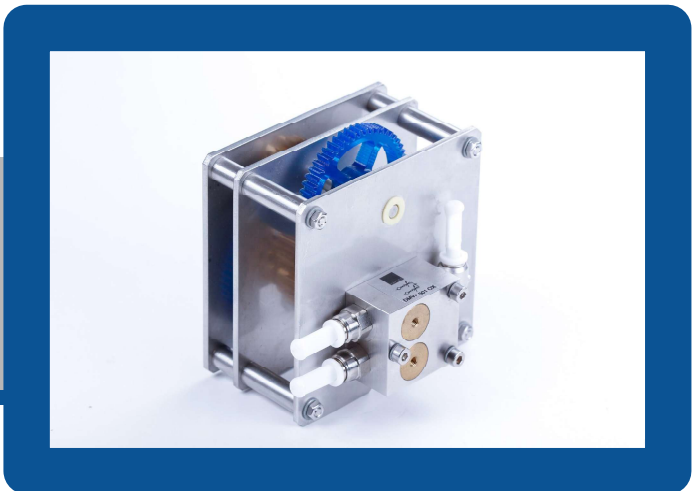




BLENDING DEVICE

A FULLY MECHANICAL BLENDER DEVICE FOR MIXING GASES OR LIQUIDS IN A SPECIFIED RATIO



Due to the COVID-19 epidemic, there has been a significant demand for both non-invasive and invasive respirators. These devices provide a mixture of clean air and oxygen for the patients. The given mixture of air and oxygen on the respirator can be adjusted by the doctor to suit the needs of the patient and the treatment. Changes in gas pressure and flow volume significantly affect the ratio of the mixture, which endangers the effectiveness of the treatment. Therefore, the mixing unit of modern machines is supplemented with an electrical control system, which can lead to additional problems in some equipment e.g. in terms of setting accuracy, fluctuation, time required, and electrical operation.

SOLUTION

The device developed by a BME researcher is an improved version of the solutions used in industry and healthcare, which is able to set and ensure the desired mixing ratio in a small volume easily and reliably with a correct reaction speed by turning a single knob. All of this is regardless of the different flow volumes and pressures connected to the inlets. The solution was originally developed to meet the needs of a respirator, but the principle of the solution can also be used to mix other gases and even liquids. The device is completely mechanical: it doesn't have any electronic controls, so it can also be used in flammable and explosive environments and media. In the event of the cessation of one of the mixture components, the device continues to operate with the remaining component, thus it can be used in rinsing (flushing) mode as well.

TRL 8 Technology complete and qualified

SEEKING one or more industry partners to further develop the technology and for licensing purposes.

BENEFITS

- Mechanical operation
- Applicability in flammable and explosive environments
- Single knob operation for specifying the mixing ratio
- Rinsing (flushing) mode available
- Small size

APPLICATION

- Medical technology (respirator)
- Gas mixture or liquid mixture systems

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INTELLECTUAL PROPERTY

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