**Open Source Ventilator**

**Over-Pressure Valve Module**

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In an intubated patient under positive pressure ventilation, a concern is that the breathing circuit pressure for some reason such as mechanical malfunction becomes much too high. An over-pressure valve is a cut-off that opens to release gas and therefore reduce breathing circuit pressure if the exceeds a threshold pressure limit. Over-pressure valve valves typically open when the pressure in the breathing circuit exceeds 60 cm H2O above atmospheric pressure. The design could have an adjustable (optional) over-pressure threshold with a default setting of 60 cm H2O. The over-pressure valve module is placed using a T-connection in pneumatic connection with the patient.

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| **Physical Input** | **Data/Control Input** | **Physical Output** | **Status** |
| **Design**  Pressure in breathing circuit | Open the over-pressure valve when breathing circuit pressure goes above -60 cm H2O ± 5 cm H2O. Accuracy of ± 5 cm H2O | Gas in the breathing circuit is released via the over-pressure valve as long as the breathing circuit pressure is above 60 cm H2O ± 5 cm H2O  Resistance to flow must be minimal. When open, resistance to flow through over-pressure valve must be low (≤ 3 cm H2O/l/s)  Design and build/3D print the over-pressure valve and verify it is accurate within ± 5 cm H2O | Not claimed; No one working on it yet |
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