Claims:

1. A respiratory ventilator system comprising:

an inlet configured to be connected to a pressurized air or gas source;

an outlet configured to be connected to a patient interface;

a valve in-line between the inlet and the outlet; and

a control unit configured to control the valve for controlling flow of pressurized air or gas from the source to a patient,

wherein the valve wherein the valve comprises a valve gate controlled by a linear drive servomechanism, and includes an air or gas reservoir or accumulator incorporated into a body of the valve.

2. The respiratory ventilator system of claim 1, with a linear drive mechanism comprises a mechanical screw drive or a voice coil drive.

3. The respiratory ventilator system of claim 1, wherein the patient interface is selected from the group consisting of a mask, an intubation tube and a tracheotomy cannula.

4. The respiratory ventilator system of claim 1, wherein the pressurized air or gas source is selected from the group consisting of an air canister, a compressor, an air pump, and pressurized airline.

5. The respiratory ventilator system of claim 1, further comprising at least one of a heater and a humidifier for conditioning the air or gas.

6. A method for assisting breathing of a patient in need of same, comprising:

providing a respiratory ventilation system of claim 1;

connecting the respiratory ventilation system to a source of pressurized air and to a patient interface;

initiating a flow of air or gas to the respiratory ventilator system to precharge the air or gas reservoir or accumulator, and controlling the flow of gas through the ventilation system by opening and closing the valve.

7. The method of claim 6, wherein the valve is opened and closed in response to the patient’s normal breathing cycle.

8. The method of claim 6, wherein the valve is opened and closed to introduce a flow of air or gas to override the patient’s normal breathing cycle.

9. The method of claim 7, wherein the patient comprises a human animal.

10. The method of claim 7, wherein the patent comprises a non-human animal.