Claims

1. A valve comprising:

a body with an interior surface defining a passageway;

one or more ports through the body to provide fluid communication between the passageway and the environment; and

at least one internal member attached to the body at two or more discontinuous attachment positions on the internal member, the internal member having a closed configuration that occludes the one or more ports when a gas pressure in the valve is above a threshold pressure and an open configuration that allows gas to pass from the passageway to the environment when the gas pressure in the valve is at or below a threshold pressure, characterized in that the at least one internal member moves in a direction that is substantially perpendicular to the direction of gases flow through the valve.

2. The valve of Claim 1, wherein the interior surface is curved.

3. The valve of any one of the preceding claims, wherein the at least one internal member is configured to progressively roll over the interior surface of the body.

4. The valve of any one of the preceding claims, wherein the at least one internal member transitions between the open configuration and the closed configuration at a distinct threshold pressure.

5. The valve of any one of Claims 1-3, wherein the at least one internal member transitions between the open configuration and the closed configuration during a range of pressures.

6. The valve of any one of the preceding claims, wherein the one or more ports is located at generally the same position along the length of the valve as the at least one internal member.

7. The valve of any one of the preceding claims, wherein the body is a round or oval tube and the at least one internal member extends around at least part of an inner circumference of the body in the closed configuration.

8. The valve of any one of the preceding claims, wherein the threshold pressure is approximately 2 cm H_20.

9. The valve of any one of the preceding claims, wherein a length of the at least one internal member between attachment positions is approximately the same as a length of the interior surface of the body between the attachment positions.

10. The valve of any one of the preceding claims, wherein the at least one internal member is a continuous member configured to extend around the interior surface of the body in the closed configuration.

11. The valve of any one of the preceding claims, wherein the at least one internal member is attached to the body by posts that extend through the body.