

WHAT IS CLAIMED IS:

1. A completion tool, comprising:

an outer housing;

an inner tube mandrel located within the outer housing, the outer housing and the inner tube mandrel defining a fluid chamber therebetween; and

a rolling seal of a flexible material and being located within the fluid chamber, the rolling seal having an open end and an opposing closed end, wherein the open end has a first edge that is attached to an outer diameter of the inner tube mandrel and a second opposing edge attached to an inner diameter of the outer housing to divide the fluid chamber into first and second smaller fluid chambers and fluidly seal the first smaller fluid chamber from the second smaller fluid chamber, the rolling seal configured to respond to a fluid pressure within the fluid chamber that causes the closed end to invert at least a portion of a length of the rolling seal, thereby transferring fluid pressure between the first and second smaller fluid chambers.

2. The completion tubing string of claim 1, wherein the rolling seal is configured to substantially invert along its entire length in response to a fluid pressure.

3. The completion tubing string of claim 1, wherein the rolling seal is cylindrically-shaped.

4. The completion tubing string of claim 3, wherein the rolling seal has a U-shaped cross section having an outer wall and an inner wall defining an interior volume into which a pressurized fluid may flow.

5. The completion tubing string of claim 1, further comprising a flow valve located between the rolling seal and a downhole end of the completion string, the flow valve positioned to operate within a central flow passage of the inner tube mandrel and being movable to either one or both of an open position and closed position.

6. The completion tubing string of claim 5, further comprising an actuation device positioned between the rolling seal and the flow valve and configured to be responsive to the fluid pressure transfer between the first and second smaller chambers of the rolling seal to move the flow valve to either one or both of the open position and closed position.

7. The completion tubing string of claim 5, wherein the flow valve is a ball valve.

8. A well completion system, comprising:

a completion string;

an outer housing connected to the completion string;

an inner tube mandrel located within the outer housing, the outer housing and inner tube mandrel defining a fluid chamber therebetween;

a rolling seal of a flexible material and being located within the fluid chamber, the rolling seal having an open end and an opposing closed end, wherein the open end has a first edge that is fixed to an outer diameter of the inner tube mandrel and a second opposing edge fixed to an inner diameter of the outer housing to divide the fluid chamber into first and second smaller fluid chambers and fluidly seal the first smaller fluid chamber from the second smaller fluid chamber, the rolling seal configured to respond to a fluid pressure within the fluid chamber that causes the closed end of the rolling seal to invert into at least a portion of a length of the rolling seal, thereby transferring fluid pressure between the first and second fluid chambers; and

a flow valve located within a central flow passage of the inner tube mandrel located between the rolling seal and a terminating end of the completion string and operable to either one or both of an open position and closed position.

9. The well completion system of claim 8, wherein the rolling seal is configured to substantially invert in response to a fluid pressure.

10. The well completion system of claim 8, wherein the rolling seal is cylindrically-shaped.

11. The well completion system of claim 10, wherein the rolling seal has a U-shaped cross section having an outer wall and an inner wall defining an interior volume into which a pressurized fluid may flow.

12. The well completion system of claim 8, wherein the flow valve is a ball valve system.

13. The well completion system of claim 12, wherein the rolling seal is comprised of a reinforced material.

14. The well completion system of claim 8, further comprising an actuation device positioned between the rolling seal and the flow valve and configured to be responsive to the fluid pressure transfer between the first and second smaller chambers of the rolling seal to move the flow valve from either one or both of the open position and closed position.

15. The well completion system of claim 8, further comprising at least one sand screen located between the rolling seal and the flow valve.

16. A method of operating a rolling seal in a fluid chamber defined by an outer housing and an inner tube mandrel of a completion string, the rolling seal dividing the fluid chambers into first and second smaller fluid chambers, comprising:

inverting the rolling seal inwardly and outwardly within the fluid chamber to transfer a fluid pressure between the first and second smaller fluid chambers; and

actuating a flow valve by the inverting to move the flow valve to either one or both of an open position and closed position.

17. The method of claim 16, wherein inverting includes applying a first fluid pressure force to the first smaller fluid chamber to cause the rolling seal to invert at least a portion of a length of the rolling seal toward the second smaller fluid chamber, thereby transferring fluid pressure from the first smaller fluid chamber to the second smaller fluid chamber.

18. The method of claim 17, wherein inverting includes applying a second fluid pressure to the second smaller fluid chamber to cause the rolling seal to invert at least a portion of a the length of the rolling seal toward the first smaller fluid chamber, thereby transferring fluid pressure from the second smaller fluid chamber to the first smaller fluid chamber.

19. The method of claim 16, wherein the flow valve is a ball valve and the inverting causes the ball valve to move from a closed position to an open position.

20. The method of claim 16, wherein inverting includes inverting a predetermined number of times that transfers fluid pressure to an actuation device positioned between the rolling seal and the flow valve and configured to be responsive to the fluid pressure transfer between the first and second smaller chambers of the rolling seal to move the flow valve to either one or both of the open position and closed position.