CLAIMS

1. A valve for controlling fluid flow, said valve comprising:

a valve body,

a chamber arranged inside said valve body,

said chamber having a proximal chamber surface and a distal chamber surface being opposite to said proximal chamber surface,

a fluid inlet for providing fluid to said chamber,

a fluid outlet for receiving fluid from said chamber,

a valve rod arranged at least partly inside said chamber,

a valve plug arranged to be moved inside said chamber, said valve plug being connected to an end portion of said valve rod, said valve rod and said valve plug being configured to control fluid flow from said fluid inlet to said fluid outlet via said chamber,

a valve insert arranged at least partly inside said chamber, said valve insert comprising a proximal portion and at least two distal portions, wherein said valve plug is adapted to be guided through at least a part of said valve insert,

wherein at least one of said distal portions of said valve insert is resiliently arranged relative said proximal portion in order for the distal portions to be movable relative each other, and

a spring arranged between said proximal chamber surface and said proximal portion of said valve insert, said spring being arranged to press said valve insert towards said distal chamber surface, wherein said valve insert and said spring are arranged inside said chamber in such a way that said distal portions are pressed against said valve plug by said spring.

2. A valve according to claim 1, wherein at least one of said distal portions of said valve insert in a first state is adapted to be moved towards

at least one other distal portion of the valve insert, and in a second state is adapted to be moved away from at least one other distal portion of the valve insert.

3. A valve according to claim 1, wherein said distal portions are separated by a gap in a circumferential direction of said valve insert.

4. A valve according to claim 1, wherein said distal portions have a main extension in a circumferential direction of said valve insert, and wherein each one of said distal portions is arranged as a circumferential segment.

5. A valve according to claim 1, wherein said proximal portion has a main extension in a circumferential direction of said valve insert.

6. A valve according to claim 1, wherein said proximal portion is connected to each one of said distal portions by a respective connecting leg.

7. A valve according to claim 1, wherein a portion of said distal chamber surface defines a receiving portion for said valve insert, and wherein said receiving portion is bevelled.

8. A valve according to claim 7, wherein a receiving portion facing surface of each one of the distal portions is bevelled in a corresponding manner as said receiving portion.

9. A valve according to claim 1, wherein said valve plug comprises a controlling portion, said controlling portion being arranged to control fluid flow from an inside of said valve insert to an outside of said valve insert or from an outside of said valve insert to an inside of said valve insert.

10. A valve according to claim 9, wherein each one of said distal portions comprises a characteristic controlling portion having a varying

height in a circumferential direction of said valve insert.

11. A valve according to claim 10, wherein said characteristic controlling portions is first characteristic controlling portion, and each one of said distal portions comprises a second characteristic controlling portion formed as a step.

12. A valve according to claim 10, wherein said valve can be arranged in:

a closed state in which said valve plug is arranged in a closed position wherein said valve plug is in sealing contact with a valve seat in order to allow no fluid, or only a leakage flow, to flow via said chamber,

a first open state in which said valve plug is arranged in a first open position wherein said valve plug is distant from said valve seat, and

a second open state in which said valve plug is arranged in a second open position wherein said valve plug is less distant from said valve seat compared to when said valve plug is in its first open position,

and wherein when said valve plug is positioned between a closed position and a second open position, said valve plug allows fluid flow through said chamber and through said valve insert over said characteristic controlling portions, and wherein a change of said valve plug position anywhere between the closed position and the second open position results in a change of fluid flow through said chamber in accordance with a first valve characteristic function.

13. A control valve according to claim 11, wherein when said valve plug is positioned between the second open position and the first open position, said valve plug allows fluid flow through said chamber and through said valve insert over said first and said second characteristic controlling portions, and wherein a change of said valve plug position anywhere between the second open position and the first open position results in a change of fluid flow through said chamber in accordance with a second valve characteristic function.

14. A valve according to claim 1, comprising a fluid passageway directing fluid from said fluid inlet to said fluid outlet via said chamber, wherein the fluid passageway directs fluid through said valve insert, in a direction from said distal portions of the valve insert towards said proximal portion of the valve insert.

15. A valve for controlling fluid flow, said valve comprising:

a valve body,

a chamber arranged inside said valve body, said chamber having a proximal chamber surface and a distal chamber surface being opposite to said proximal chamber surface,

a fluid inlet for providing fluid to said chamber,

a fluid outlet for receiving fluid from said chamber,

a valve rod arranged at least partly inside said chamber,

a valve plug arranged to be moved inside said chamber, said valve plug being connected to an end portion of said valve rod, said valve rod and said valve plug being configured to control fluid flow from said fluid inlet to said fluid outlet via said chamber,

a valve insert arranged at least partly inside said chamber, said valve insert comprising a proximal portion and at least two distal portions, wherein said valve plug is adapted to be guided through at least a part of said valve insert, wherein at least one of said distal portions of said valve insert is resiliently arranged relative said proximal portion in order for the distal portions to be movable relative each other,

wherein said valve insert includes a spring portion, said spring portion being arranged to press said valve insert towards said distal chamber surface, wherein said valve insert is arranged inside said chamber in such a way that said distal portions are pressed against said valve plug by said spring portion.

16. A valve according to claim 15, wherein at least one of said distal portions of said valve insert in a first state is adapted to be moved towards at least one other distal portion of the valve insert, and in a second state is adapted to be moved away from at least one other distal portion of the valve insert.

17. A valve according to claim 15, wherein said distal portions are separated by a gap in a circumferential direction of said valve insert.

18. A valve according to claim 15, wherein said distal portions have a main extension in a circumferential direction of said valve insert, and wherein each one of said distal portions is arranged as a circumferential segment.

19. A valve according to claim 15, wherein said proximal portion has a main extension in a circumferential direction of said valve insert.

20. A valve according to claim 15, wherein said proximal portion is connected to each one of said distal portions by a respective connecting leg.