Claims

1. Operating valve for a pressure cooker (60), having

   a movable spherical sealing element (4),

   a conically shaped surface as a valve seat (5), and

   a compression spring (21) which applies an adjustable compressive force onto the spherical sealing element (4), wherein the surface of the valve seat (5) conically diverges at an angle α of 30° to 40°, preferably 33° to 37°, in particular 35°.

2. Operating valve according to claim 1, characterized in that the compression spring (21) is a torsion bar spring.

3. Operating valve according to claim 2, characterized in that the compressive force of the torsion bar spring (21) can be adjusted to at least two pressure stages and can be adjustable within a range of 0 to 5 N.

4. Operating valve according to at least one of claims 1 to 3, characterized in that the spherical sealing element (4) and the valve seat (5) are made of metal.

5. Operating valve according to at least one of claims 1 to 4, characterized in that the operating valve (1) comprises a valve box (2) with a valve core (3) comprising the valve seat (5).

6. Operating valve according to claim 5, characterized in that the valve box (2) is made of flexible, preferably transparent plastics, in particular of silicone.

7. Operating valve according to at least one of claims 1 to 6, characterized in that the spherical sealing element (4) is embodied as a valve pin with an upper region (8a) which comprises a spherical segment as a sealing surface (7), and a rod-shaped extension (8b).

8. Operating valve according to at least one of claims 1 to 7, characterized in that the valve box (2) comprises a through opening (12) which extends through the valve box (2) and in which, at least in the upper region, the valve core (5) is received, the valve box comprising at least one opening (9) essentially extending radially outside which is in connection with the through opening (12).

9. Operating valve according to at least one of claims 1 to 8, characterized in that the rod-shaped extension (8b) is floating in the valve box (2).

10. Pressure cooker in the lid (34) of which an operating valve according to at least one of claims 1 to 9 is inserted, the lid furthermore comprising a pressure valve (20) which opens at a predetermined pressure in the pressure cooker.

11. Pressure cooker according to claim 10, characterized in that the pressure valve (20) comprises: a ball (23), a compression spring (22), a valve box (24) with a conically shaped surface (28) as a valve seat, where the valve box (24) comprises an upper collar (27), and the pressure valve (20) is arranged in an opening of the lid (34) such that the lid is lying between the collar (27) and the sealing ring (30), such that the pressure valve (20) can be vertically moved in the lid (34).

12. Pressure cooker according to claim 11, characterized in that the ball (23) and the

conical surface (28) are made of metal.

13. Pressure cooker according to claim 11 or 12, characterized in that the surface (28) conically diverges at an angle α of 30° to 40°, preferably 33° to 37°, in particular 35°.

14. Pressure cooker according to at least one of claims 10 to 12, characterized in that at least one radially extending opening (31) is formed in the valve box (24) above the sealing ring (25).

15. Pressure valve for a pressure cooker (60) with a ball (23), a compression spring (21), a valve box (24) with a conically shaped surface (28) as a valve seat, the valve box (24) comprising an upper collar (27), and where the pressure valve (20) can be arranged in an opening of a lid (34) of the pressure cooker (60), such that the lid is lying between the collar (27) and the sealing ring (30), such that the pressure valve (20) can be vertically moved in the lid (34), wherein the surface (28) conically diverges at an angle α of 30° to 40°, preferably 33° to 37°, in particular 35°.

Claims

1. Operating valve for a pressure cooker (60), having

   a movable spherical sealing element (4),

   a valve box (2) comprising a through opening (12) which extends through the valve box (2); and a conically shaped surface as a valve seat (5) provided in an upper region of the through opening (12), wherein the surface of the valve seat (5) conically diverges at an angle α of 30° to 40°, and

   a compression spring (21) which applies an adjustable compressive force onto the spherical sealing element (4),

   wherein the spherical sealing element (4) comprises an upper region (8a) which comprises a spherical segment as a sealing surface (7); a rod-shaped extension (8b); and a projecting edge provided at a lower end of the rod-shaped extension (8b)

   wherein the valve box (2) comprises a plurality of ribs (13) which are provided at a lower position than the valve seat (5) in the through opening (12), distributed around an inner circumference of the through opening (12), and extending along a direction of extension of the through opening (12),

   a diameter of the projecting edge (19) is larger than a distance between ribs (13) opposite each other and is smaller than a diameter of the through opening (12) at its lower position than the plurality of ribs (13).

2. Operating valve according to claim 1, characterized in that the compression spring (21) is a torsion bar spring.

3. Operating valve according to claim 2, characterized in that the compressive force of the torsion bar spring (21) can be adjusted to at least two pressure stages and can be adjustable within a range of 0 to 5 N.

4. Operating valve according to at least one of claims 1 to 3, characterized in that the spherical sealing element (4) and the valve seat (5) are made of metal.

5. Operating valve according to at least one of claims 1 to 4, characterized in that the operating valve (1) comprises a valve box (2) with a valve core (3) comprising the valve seat (5).

6. Operating valve according to claim 5, characterized in that the valve box (2) is made of flexible, preferably transparent plastics, in particular of silicone.

7. Operating valve according to at least one of claims 1 to 6, characterized in that the spherical sealing element (4) is embodied as a valve pin with an upper region (8a) which comprises a spherical segment as a sealing surface (7), and a rod-shaped extension (8b).

8. Operating valve according to at least one of claims 1 to 7, characterized in that the valve box (2) comprises a through opening (12) which extends through the valve box (2) and in which, at least in the upper region, the valve core (5) is received, the valve box comprising at least one opening (9) essentially extending radially outside which is in connection with the through opening (12).

9. Operating valve according to at least one of claims 1 to 8, characterized in that the rod-shaped extension (8b) is floating in the valve box (2).

10. Pressure cooker in the lid (34) of which an operating valve according to at least one of claims 1 to 9 is inserted, the lid furthermore comprising a pressure valve (20) which opens at a predetermined pressure in the pressure cooker.

11. Pressure cooker according to claim 10, characterized in that the pressure valve (20) comprises: a ball (23), a compression spring (22), a valve box (24) with a conically shaped surface (28) as a valve seat, where the valve box (24) comprises an upper collar (27), and the pressure valve (20) is arranged in an opening of the lid (34) such that the lid is lying between the collar (27) and the sealing ring (30), such that the pressure valve (20) can be vertically moved in the lid (34).

12. Pressure cooker according to claim 11, characterized in that the ball (23) and the conical surface (28) are made of metal.

13. Pressure cooker according to claim 11 or 12, characterized in that the surface (28) conically diverges at an angle α of 30° to 40°, preferably 33° to 37°, in particular 35°.

14. Pressure cooker according to at least one of claims 10 to 12, characterized in that at least one radially extending opening (31) is formed in the valve box (24) above the sealing ring (25).