CLAIMS

1. A valve device for liquids, in particular for liquid plastic components of single-component or multi-component plastic mixtures, comprising a valve housing (1) having a liquid feed (2) and a metering valve (3) having a discharge opening (5) closeable by a closure element (4), a pressure control device acting on the liquid in the liquid feed (2) and including a control diaphragm (6) acting on the closure element (4), and a shut-off diaphragm (7) which separates the pressure control device from the liquid feed (2), characterised in that the pressure control device includes a fluid-tight control chamber (8) for a substantially incompressible fluid, that is arranged at least partially in the valve housing (1), wherein there is provided a pressure generating device by which the control diaphragm (6) can be acted upon with pressure by way of an incompressible fluid arranged in the control chamber (8).

2. The valve device as set forth in claim 1 wherein the shut-off diaphragm (7) is arranged at the closure element (4), preferably at an end of the closure element (4), that is remote from the discharge opening (5).

3. The valve device as set forth in claim 1 or claim 2 wherein the pressure control device includes a transmission element (24) arranged between the control diaphragm (6) and the closure element (4) for transmission of a pressure acting on the control diaphragm (6) to the closure element (4).

4. The valve device as set forth in claim 2 or claim 3 wherein the transmission element (24) is arranged between the control diaphragm (6) and the shut-off diaphragm (7).

5. The valve device as set forth in at least one of the preceding claims wherein the control chamber (8) is closed off with respect to the pressure generating device by a first seal, preferably a first rolling diaphragm (11).

6. The valve device as set forth in at least one of the preceding claims wherein the pressure generating device has a force storage means (9) and a pressure transmission element (10) which can be acted upon with a force by the force storage means (9).

7. The valve device as set forth in claim 6 wherein the force storage means (9) is in the form of a coil spring.

8. The valve device as set forth in claim 6 or claim 7 wherein the force storage means (9) is of an at least two-part configuration.

9. The valve device as set forth in claim 8 wherein the force storage means (9) includes a first force storage means (91) and a second force storage means (92) which are connected in succession, wherein preferably the first force storage means (91) and the second force storage means (92) are respectively supported at a flange (16) of a slider (15) arranged displaceably on the pressure transmission element (10).

10. The valve device as set forth in at least one of the preceding claims wherein the valve housing (1) is of an at least two-part configuration.

11. The valve device as set forth in claim 10 wherein the valve housing (1) includes a first valve housing portion (1a) and a second valve housing portion (1b), wherein the first valve housing portion (1a) can be releasably connected to the second valve housing portion (1b).

12. The valve device as set forth in claim 11 wherein arranged in the first valve housing portion (1a) are at least the metering valve (3), the discharge opening (5), the closure element (4), the liquid feed (2) and the shut-off diaphragm (7).

13. The valve device as set forth in claim 11 or claim 12 wherein arranged in the second valve housing portion (1b) are at least the control diaphragm (6) and the control chamber (8) and preferably also the pressure generating device.

14. The valve device as set forth in claim 11 or claim 12 wherein the valve housing (1) includes a third valve housing portion (1c) in which the pressure generating device and a first control chamber region (8a) are arranged, wherein arranged in the second valve housing portion (1b) are the control diaphragm (6) and a third control chamber region (8c) which is connected to the first control chamber region (8a) by way of a conduit (23) forming a second control chamber region (8b), wherein

the first control chamber region (8a), the second control chamber region (8b) and the third control chamber region (8c) jointly form the control chamber (8).

15. The valve device as set forth in any one of claims 6-9, further comprising a controllable relief device by which the force exerted on the pressure transmission element (10) by the force storage means (9) can be reduced.

16. The valve device as set forth in claim 15 wherein the relief device includes a relief chamber (12).

17. The valve device as set forth in claim 16 wherein a fluid opening (13) opens into the relief chamber (12), by way of which fluid opening a fluid under pressure – preferably air – can be introduced into the relief chamber (12).

18. The valve device as set forth in claim 16 or claim 17 wherein the pressure transmission element (10) has a shoulder (14) which delimits the relief chamber (12).

19. The valve device as set forth in at least one of claims 16 through 18 wherein the relief chamber (12) is at least partially closed off with respect to the pressure transmission element (10) by a second seal, preferably a second rolling diaphragm (18).