

CLAIMS

1. A valve arrangement (1) for a wellhead of a hydrocarbon well, the valve arrangement comprising

- 5 - a valve (10) comprising connection elements configured for sealingly and removably mounting of the valve in a port of a wellhead,
- an actuator device (20) for actuating the valve to move to an open position, the actuator device comprising
- 10 - a housing (30) having a through channel (32) extending between a first end (34), at which the valve is mounted, and a second end (36), the housing comprising at least one first port (40) extending through a sidewall (38) of the housing and leading into the through channel,
- an actuator rod (50) that is movably arranged in the through channel (32) and which is configured to open the valve by the actuator rod being movable between at least a
- 15 first position and a second position,
- a control device (60) arranged to control the movement of the actuator rod (50),
- characterised in that
- the through channel (32) comprises a first part (32a) and a second part (32b),
- a piston-cylinder arrangement (54) is arranged in the second part (23b) of the through
- 20 channel in a sealing manner,
- the first part (32a) of the through channel is delimited by the valve (10) at one end and t by the piston-cylinder arrangement at the other end, and
- the at least one first port (40) is a bleed off port and/or connectable to an external injection fluid source and it leads into the first part (32a) of the through channel.

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2. The valve arrangement according to claim 1, wherein the actuator rod (50) is located inside the first part (32a) of the through channel.

3. The valve arrangement according to any one of claims 1-2, wherein at least a part of the

30 actuator rod (50) comprises a hollow tube provided with perforations (52) made at an angle to its direction of movement.

4. The valve arrangement according to any one of the preceding claims, wherein the piston-cylinder arrangement (54) comprises a movable piston (55) that is connected to the actuator rod (50).
- 5 5. The valve arrangement according to claim 4, wherein the control device (60) is configured to control a movement of the piston (55) and thereby control the movement of the actuator rod (50) connected to the piston.
6. The valve arrangement according to any one of the preceding claims, wherein the control
10 device (60) is configured to be manually operable.
7. The valve arrangement according to any one of claims 1-6, wherein the piston-cylinder arrangement (54) comprises a cylinder (56) that is fixed inside the second part (32b) of the through channel and which cylinder has a through bore (57), and the piston-cylinder
15 arrangement comprises a piston (55) that is movable inside a first part (57a) of the through bore (57) in a sealing manner, which first part (57a) is open towards the first part (32a) of the channel (32), and said piston forming part of the actuator device (20), wherein the actuator rod (50) is connected to the piston, and the piston being movable in relation to the cylinder by means of the control device (60).
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8. The valve arrangement according to claim 7, wherein the through bore (57) of the cylinder (56) of the piston-cylinder arrangement (54) comprises a second part (57b), which second part is open towards an exterior of the housing (30) and configured to receive the control device in order for the control device to engage with the piston (55).
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9. The valve arrangement according to claim 8, wherein the control device comprises a control tool that is insertable into the second open part of the through bore of the cylinder.
10. The valve arrangement according to any one of claims 8-9, wherein the second part (57b)
30 of the through bore (57) comprises a threaded section (59) and the control device (60) comprises a control tool (70) having a threaded shaft (71) and a turning handle (72) for turning the threaded shaft, which threaded shaft is configured to be insertable into the second part

(57b) of the through bore and to enter into threaded engagement with the threaded section and to engage with an end part (58) of the piston (55) when inserted into the second part (57b) of the through bore.

- 5 11. The valve arrangement according to any one of claims 9-10, wherein the control tool (70) is removable from the valve arrangement.

12. The valve arrangement according to any one of the preceding claims , wherein the cylinder (56) of the piston-cylinder arrangement (54) is connected to the housing (30) by a thread
10 connection and fulfils the function of a valve removal plug.
