Claims.

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1.- A compressor or vacuum pump device with a liquid-injected compressor or vacuum pump element (2),
which compressor or vacuum pump device (1) further comprises a liquid return system (7), a motor (4) to drive the liquid-injected compressor or vacuum pump element (2), a gearbox (3) provided between the motor (4) and the liquid-injected compressor or vacuum pump element (2), and a liquid separator vessel (5) in fluid connection with an outlet (6) of the liquid-injected compressor or vacuum pump element (2),
wherein the liquid return system (7) comprises a main body (8) with a chamber provided with an outlet (16) and a first inlet (9),
wherein the first inlet (9) is in fluid connection with the liquid separator vessel (5) and receives a first compressed gas flow (11) from the liquid separator vessel (5), and
wherein the outlet (16) is in fluid connection with an injection point (17) of the liquid-injected compressor or vacuum pump element (2),
characterized in that
the chamber is also provided with a second inlet (12) which is in fluid connection with the gearbox (3) and receives a second fluid flow (15) from the gearbox (3),
wherein the chamber is configured to mix the aforementioned first compressed gas flow (11) and the second fluid flow (15) together into a third fluid flow (20), which third fluid flow (20) leaves the chamber via the outlet (16) and is directed via the injection point (17) into the liquid-injected compressor or vacuum pump element (2), and
that the liquid return system (7) further comprises a relief valve (25) integrated on the main body (8).

2.- The compressor or vacuum pump device according to claim 1, characterized in that the second inlet (12) is in fluid connection with the gearbox (3) by means of a suction line (13).

3.- The compressor or vacuum pump device according to claim 2, characterized in that the suction line (13) is made of a transparent material.

4.- The compressor or vacuum pump device according to claim 2 or 3, characterized in that the suction line (13) is provided with a sensor (21) which is configured to detect a presence of liquid in the suction line (13).

5.- The compressor or vacuum pump device according to claim 4, characterized in that the sensor (21) is an optical sensor.

6.- The compressor or vacuum pump device according to claim 4, characterized in that the sensor (21) is provided with a transmitter (22) that is configured to send a signal that can be received by a receiver.

7.- The compressor or vacuum pump device according to claim 6, characterized in that the signal is a wireless signal.

8.- The compressor or vacuum pump device according to one of the preceding claims 1-3, characterized in that the liquid-injected compressor or vacuum pump element (2) is an oil-injected compressor or vacuum pump element, preferably an oil-injected screw compressor or screw vacuum pump element.

9.- The compressor or vacuum pump device according to one of the preceding claims 1-3, characterized in that the liquid-injected compressor or vacuum pump element (2) is a water-injected compressor or vacuum pump element, preferably a water-injected screw compressor or screw vacuum pump element.

10.- The compressor or vacuum pump device according to one of the preceding claims 1-3, characterized in that the liquid return system (7) further comprises a control unit (26) integrated on the

main body (8), which control unit (26) is configured to control a flow rate of the third fluid flow (20).

11.- The compressor or vacuum pump device according to one of the preceding claims 1-3, characterized in that the liquid return system (7) further comprises an underpressure generating means (19), which underpressure generating means (19) generates an underpressure in the gearbox (3).

12.- The compressor or vacuum pump device according to claim 11, characterized in that the underpressure generating means (19) is provided in the main body (8) of the liquid return system (7), preferably as a venturi ejector.

13.- The compressor or vacuum pump device according to one of the preceding claims 1-3, characterized in that the first inlet (9) is in fluid connection with the liquid separator vessel (5) via a throttling means (10).

14.- The compressor or vacuum pump device according to one of the preceding claims 1-3, characterized in that the second inlet (12) is in fluid connection with the gearbox (3) via a non-return valve (14), which non-return valve (14) allows only a fluid flow from the gearbox (3) to the liquid return system (7).

15.- A liquid return system for a compressor or a vacuum pumping device,
which compressor or vacuum pump device further comprises a motor (4) to drive the liquid-injected compressor or vacuum pump element (2), a gearbox (3) provided between the motor (4) and the liquid-injected compressor or vacuum pump element (2), and a liquid separator vessel (5) in fluid connection with an outlet (6) of the liquid-injected compressor or vacuum pump element (2),
wherein the liquid return system (7) comprises a main body (8) with a chamber provided with an outlet (16) and a first inlet (9),

wherein the first inlet (9) is configured to be in fluid connection with the liquid separator vessel (5) and to receive a first compressed gas flow (11), and

wherein the outlet (16) is configured to be in fluid connection with an injection point (17) of the liquid-injected compressor or vacuum pump element (2),

characterized in that

the chamber is further provided with a second inlet (12) which is configured to be in fluid connection with the gearbox (3) and to receive a second fluid flow (15), wherein the chamber is configured to mix the aforementioned first compressed gas flow (11) and second fluid flow (15) together into a third fluid flow (20), which third fluid flow (20) leaves the chamber via the outlet (16),

that the liquid return system (7) further comprises a control unit (26) integrated on the main body (8), which control unit (26) is configured to control a flow rate of the third fluid flow (20), and

that the liquid return system (7) further comprises a relief valve (25) integrated on the main body (8).

16.- The liquid return system according to claim 15, characterized in that it further comprises an underpressure generating means (19), preferentially provided in the main body (8), which underpressure generating means (19) is configured to generate an underpressure in the gearbox (3).

17.- The liquid return system according to claim 16, characterized in that underpressure generating means (19) is a venturi ejector.

18.- The liquid return system according to claim 17, characterized in that it is designed as a modular element in relation to the compressor or vacuum pump device in such a way that the liquid return system (7) can be detachably arranged in fluid connection with the compressor or vacuum pumping device and that after detaching the liquid return system (7) the compressor or vacuum

pump device can continue to function under normal operating conditions.

19.- A method for draining liquid from a gearbox (3) of a compressor or vacuum pump device (1) with a liquid-injected compressor or vacuum pump element (2),
wherein the compressor or vacuum pump device (1) further comprises a motor (4) for driving the liquid-injected compressor or vacuum pump element (2) and a liquid separator vessel (5) in fluid connection with an outlet (6) of the liquid-injected compressor or vacuum pump element (2),
wherein the gearbox (3) is provided between the motor (4) and the liquid-injected compressor or vacuum pump element (2),
characterized in that
by means of a liquid return system (7) liquid is removed from the gearbox (3) by means of a fluid connection between said liquid return system (7) and the gearbox (3), and mixed with a fluid flow from the liquid separator vessel (5), after which the liquid mixed with this fluid flow is directed into the liquid-injected compressor or vacuum pump element (2); and
that, if a pressure in the liquid return system (7) exceeds a predefined limit, the fluid flow is vented from the liquid return system (7).

20.- The method according to claim 19, characterized in that an underpressure generating means (19) is used to generate an underpressure in the gearbox (3).

21.- The method according to claim 19 or 20 characterized in that a presence of liquid in the fluid connection between the liquid return system (7) and the gearbox (3) can be detected by means of a sensor (21).

22.- The method according to claim 21, characterized in that the presence of liquid in the fluid connection between the liquid

return system (7) and the gearbox (3) is detected by an optical sensor.

23.- The method according to claim 21, characterized in that the sensor (21) sends a signal via a transmitter (22) with information about the aforementioned presence of liquid in the fluid connection between the liquid return system (7) and the gearbox (3), which signal can be received by a receiver.

24.- The method according to claim 23, characterized in that the signal is a wireless signal.