Operating and Maintenance Instructions for
Automatic Air and Vacuum Valve for Potable Water and Waste Water
Model 986 (from Year of manufacture 2013)

1.Intended use

The Hawle automatic air and vacuum valve, Model 986, is used for aerating and de-aerating of pressure pipe line systems for a pressure range betwenn 0 - 16 bar.
Medium: domestic waste water, potable water
Max. operating pressure: 16 bar

When installing and maintenance the valid standards and regulations are in addition to the assembly instructions, to comply with accident prevention regulations and the regulations of the trade association.

Note: Air and vacuum valves contain compressed air. Therefore, isolate the air and vacuum valve from the operating system. Befor starting any maintenance work the valve must be depressurized via the ball valve!

2. Product description

The automatic air and vacuum valve with patented roll-on membrane technique is perfectly suitable to release major amounts of air under operating pressure.

The valve seat is not in contact with the medium. The air valve operates continuously from 0 to 16 bar, perfectly sealing even when unpressurized. Moreover, the roll-on membrane and the spring mechanism absorb water hammers.

The air valve is provided with a flushing connection. By connecting a flushing line, dirt can be flushed out of the air valve easily and quickly. In case of major dirt, the interior have to be dismantled, cleaned and re-installed (Point 5).

3. Installation

The air and vacuum valve must be installed on a vertical outlet directly the pressure pipeline.
Note: The lateral arrangement of air valves may considerably influence the control behavior of the valve.

This automatic valve is intended for installation in shafts.
There should always be a shut-off facilitiy below the air and vacuum valve to allow maintenance work.

The discharge elbow allows connection to a sufficiently large dimensioned, on site to create a ventilation pipe.

Further information on installation and operating of air and vacuum valves can be found in the current DVGW-technical rules W334.

4. Start-up and pressure testing

During pressure testing of new pipeline systems air valves should be generally put out of service.
To this end the shut-off facility below the valve shall be closed.

After completion of pressure testing of the pipeline the shut-off facility is opened slowly and the air valve and its flange connections are visually inspected under operating pressure.

Note: Before scavenging a pipe line section with compressed air, the valve should be put out of service or with an air release stop Nr. 986ES, which automatically performs this function, to equip. The retrofitting of already built-in valves with an air release stop is possible.

5. Service - maintenance of automatic air and vacuum valve, Nr. 986

Automatic air and vacuum valves are to maintain at least 1x per year and especially in waste water pressure pipe with high degree of pollution conforming to DVGW W 392.

All work at automatic air and vacuum valves should be performed by personnel which is trained. We recommend the first maintenance to be done after a period of approx. 4 - 8 weeks and to define further maintenance intervals on the basis of the result of this first maintenance.

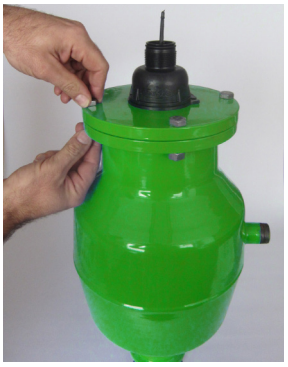
The reliability of the automatic air valve from the pipeline system befor starting any maintenance work by closing the shut-off valve and to reduce any overpressure possibly existing in the air valve via the ball valve of the flushing line.

When entering manholes are basically the general safety precautions to comply with.

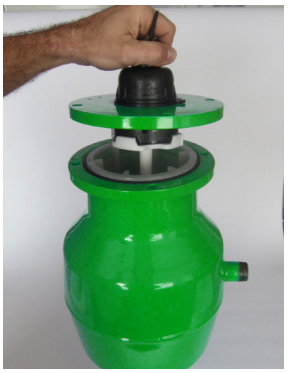
We recommend to carry out a forced ventilation of the building work in shafts and carry out maintenance work only when pumps switched off.

After maintenance is a proper pressure test according to the valid rules and regulations carry out.

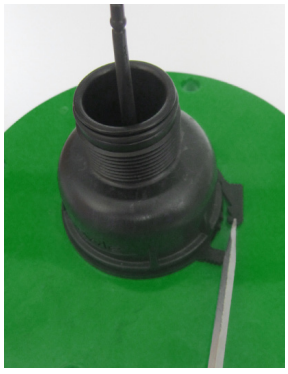
5.1 Open body screws.

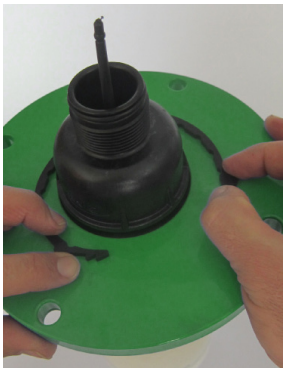


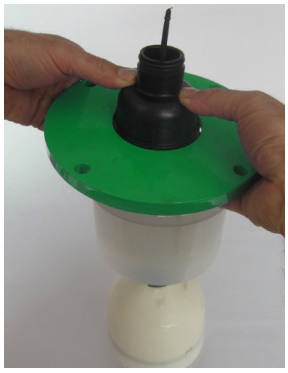
5.2 Pull the flange together with the complete valve mechanism upward and out and put it upright on a solid base.



5.3 Open the retaining ring on the flange top side by means of an appropriate tool and pull the flange upward and off

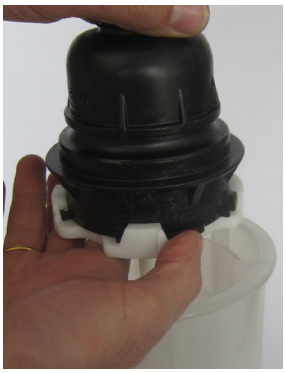


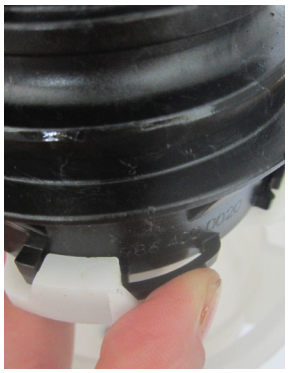




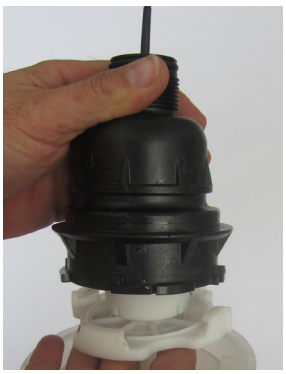
Note: Blue epoxy powder coating fot potable water:

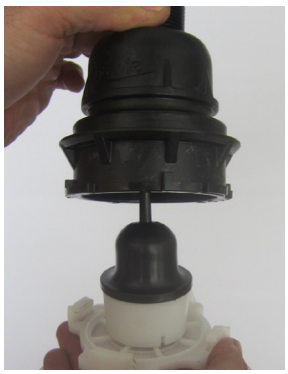
5.4 Remove debris screen (white) by pressing the safety lock (black). Turn debris screen clockwise. Move upper air valve part upward.





5.5 Clean the slots of the valve cage and rinse them.

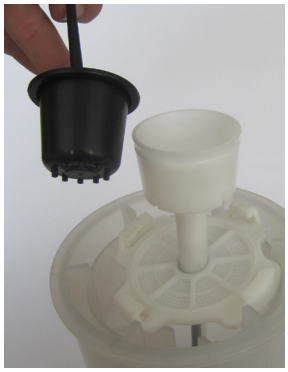
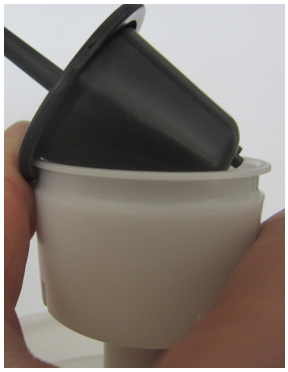
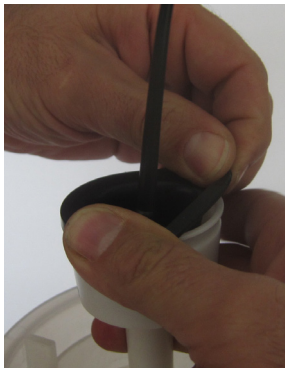
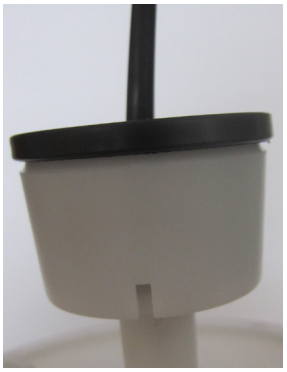




5.6 Roll diaphragm out and lock for remains of debris or mechanical damages. Remove debris with a wet towel. In case a change of the whole diaphragm is necessary, remove use diaphragm from the groove and replace it by an unused diaphragm.

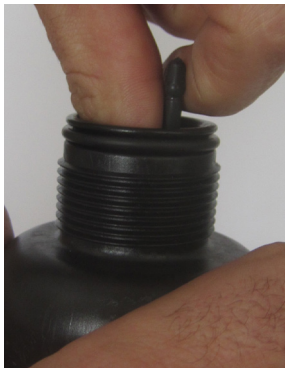
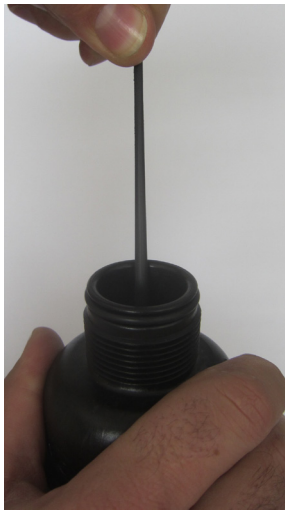
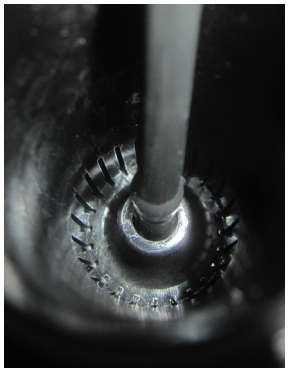
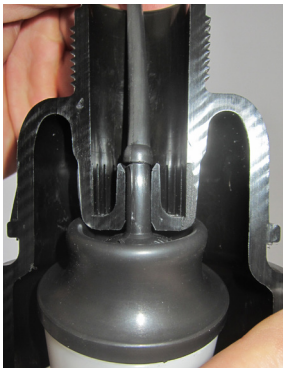
Assembly of the diaphragm:

5.7 Pull the diaphragm over the diaphragm holder (white).

5.8 Check the correct placement of the diapragm within the groove.

5.9 Assembly of the diaphragm within the upper air valve part:
Put the end of the rubber string through the bore whole of the upper air valve part. Pull the string upward until the wider part of the rubber string moves through the bore whole. You either can hear or feel this final step. Diaphragm is in place now.

(Upper air valve part in cut sample view)

5.10 The rest of the assembly follows the steps vice versa 4 through 1 of this manual.

5.11 Leakage test

If you have any more questions or need more information, please don‘t hesitate to contact us:

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