OZONE ANALYZER BMT 963

Dismantling the Analyzer and Cleaning the Cuvette

Rev. 01/99

Attention: The installation of the power connector (pluggable terminal block) has to be done by a person aquainted with the problems involved. Do not connect or disconnect the voltage carrying terminal block!

1. Opening the casing

Remove the four screws at the corners of the rear panel using a 2 mm Allen wrench, (do not extract any other screws!) withdraw the device at its rear panel from the casing. The tube connections or the filter may be used for pulling the device out, but not any cables.

2. Unscrewing the tube connections

Unscrew the two union nuts covering the cuvette's PTFE tubes connected to the rear panel and withdraw the tubes.

3. Separating the lamp housing and the cuvette block from the circuit board

The lamp housing and the cuvette block - the black "T" on the circuit board - comprise an inseparable unit. This unit can be removed by unscrewing the four outer screws (M3 Philips) on the lower side of the circuit board. Do not loosen the two screws fixed with varnish - this could damage the UV lamp!

The cuvette opening (on the circuit board side) must always point upwards so that the contents of the cuvette do not fall out. Keep both the circuit board and the cuvette block pressed together (against the spring inside the cuvette block).

First, the two screws near the edge of the circuit board shall be unscrewed, followed by the two screws at the centre of the circuit board. The circuit board is then lifted from the cuvette block with the bottom side pointing upwards.

4. Dismantling the cuvette

The following parts may now be removed from the bore in the cuvette - and in this order:

- spring
- black aluminium ring
- O-ring (seal)
- lower cuvette window (with the cuvette upside-down)
- spacer (which determines the length of the cuvette)
- upper cuvette window
- O-ring (though it normally remains in the cuvette block)

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5. Cleaning the cuvette

The cuvette window, spacer and seals can be cleaned with water (or with household detergent or alcohol). If the cuvette is soiled badly, check and clean the cuvette block (you can clean the 12mm bore with a "Q-Tip" or similar), the PTFE tubes and the tube screw fittings. Dry all the parts, and remove dust with a paint-brush, particularly from the seals. If necessary, use new (quartz) cuvette windows and O-Rings (FFPM).

6. Assembling the cuvette

The Assembly of the cuvette has to be done in reverse order of its disassembly:

- insert the upper O-ring (if it had been removed)
- insert the upper cuvette window
- insert the spacer

The wire spacer consists of two thick rods and two thin wires which join them. During assembly, one of the two thicker rods is placed diagonally between the gas inlet and outlet (but without blocking them!). This is a particularly critical operation with the range 200 model.

For special measuring ranges, where a PVC spacer is used, there is only one possible insertion position - whereby the openings of the spacer lie in front of the cuvette-block's holes.

The etched spacer is fixed to a cuvette window (usually the lower one). The assembly must make sure that the radial opening is facing the outlet and the almost tangential opening matches the inlet and the spacer is located between the two windows (otherwise exchange them).

- insert the lower cuvette window
- insert the O-ring
- insert the black aluminium ring with the conical face pointing towards the sealing O-ring
- insert the spring

Join the circuit board with the cuvette block and fasten it with the four screws, first tightening the two screws near the cuvette. Whilst tightening the screws, press the circuit board and the cuvette block together (counter to the force of the spring) so that the spacer in the cuvette stays in ist correct orientation.

7. Connect the tubes

Reconnect the tubes to the interior of the device and tighten the union nuts *by hand*. Now, a leak test is obligatory! If dust is not removed from the O-rings in the cuvette, it will result in a ozone leakage!

8. Closing the casing

Slide the circuit board into the casing's guide slots and fasten the rear panel with 4 Allen screws.

9. Functional test

After thightening the screws at the rear panel connect the instrument with power and allow warming up for a few minutes.

An indicator for the level of contamination is displayed at the end of the zeroing (above around serial number 96093087). The value of about 0.93 indicates a clean cuvette. Below about 0.70, the cuvette should cleaned again, and below 0.41 the DIRTY LED is blinking.

If cleaning was unsuccessful, only a replacement of the cuvette windows will help.