

1 Product description

This electrode is suitable for the determination of trace concentrations of heavy metals by means of stripping voltammetry.

2 Checking the delivery

Immediately upon arrival of the merchandise, check the shipment against the delivery note to ensure completeness and absence of damage.

3 Equipping the measuring head

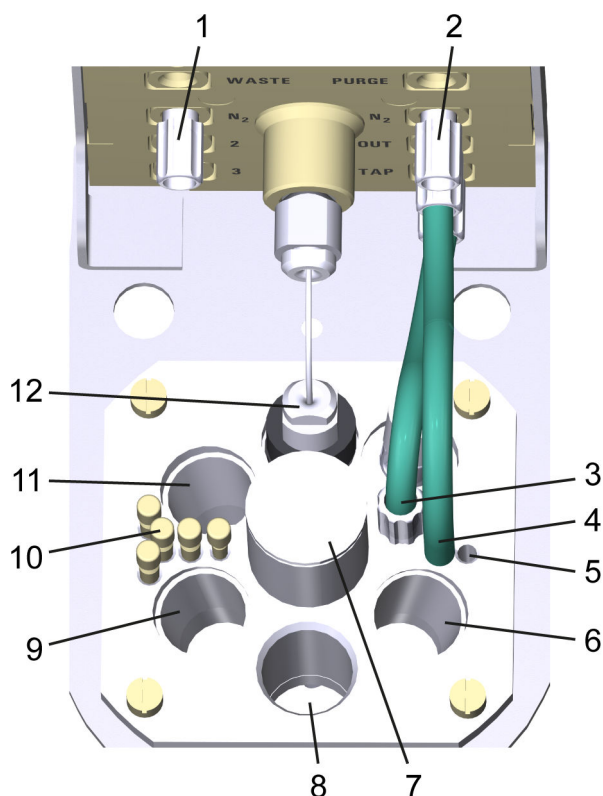


Figure 1: Measuring head of 884 Professional VA

1. On the measuring head connector plate, there are M6 threaded openings that are marked with *N2*.
 - a. Remove the FEP tubings (positions 1 and 2) from the openings.
 - b. Close the openings with the threaded stoppers (6.1446.040).
2. Install the stirrer in position 12.
3. Install the tubing (6.1829.030) in position 5. Connect the tubing to the M6 threaded opening that is marked with *PURGE* on the measuring head connector plate.
4. The following tubings (positions 3 and 4) should already be connected.
 - a. Make sure that the FEP tubing in position 3 is connected to the M6 threaded opening that is marked with *TAP*.
 - b. Make sure that the tubing in position 4 is connected to the M6 threaded opening that is marked with *OUT*.
5. Close the electrode opening (7) with the cover (6.2753.210).
6. Place the reference electrode and the auxiliary electrode in positions 6 and 11.

7. Connect the electrode cable that is marked with *RE* to the connector of the reference electrode.
8. Connect the cable that is marked with *AE* to the connector of the auxiliary electrode.
9. Place the bismuth drop electrode in position 9 (see figure 2, page 2).
10. Connect the electrode cable that is marked with *WE* to the connector of the bismuth drop electrode.
11. Close the spare openings for tubing connections (10) with suitable stoppers from the stopper set (6.2709.110).
12. After attaching the measuring head cover, close the pipetting opening (8) with the stopper (6.2709.100).

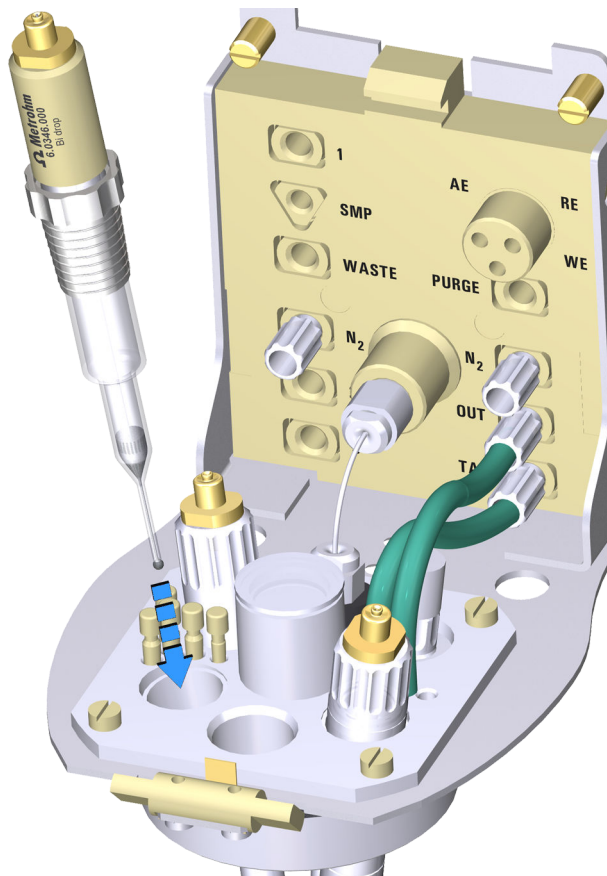


Figure 2: Position of bismuth drop electrode

4 Activating

1. If the electrode is new or has not been used for longer than 1 hour, then activate it electrochemically prior to use.
2. Refer to the application documentation in the [Application Finder](#).

5 Cleaning

The bismuth drop electrode is sensitive against mechanical treatment. Therefore, it must be cleaned electrochemically. For an electrochemical cleaning procedure, refer to the respective application documentation in the [Application Finder](#).



NOTICE

Protect the electrode against mechanical stress. Mechanical cleaning (e.g. polishing) is not permitted.

- Do not treat the electrode in an ultrasonic bath as such a treatment might damage the electrode.
 - Avoid contact with concentrated mineral acids.
 - Do not touch the bismuth drop.
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- Rinse the electrode with ultrapure water after each measurement.
 - Allow the electrode to dry in the air if it is not immediately used again.

Keep the electrode surface clean at all times.

6 Storing

- Store the electrode dry and protected in the storage vessel.
- Do not store the electrode in water.

7 Troubleshooting

If the performance of the electrode significantly deteriorates, run the electrochemical cleaning procedure as described in the application documentation, see [Application Finder](#).

If the bismuth drop is covered with a black film (not dark gray), proceed as follows:

1. Dip the black colored bismuth drop for a short period of time (3–5 s) in concentrated nitric acid ($w(\text{HNO}_3) = 65\%$).
2. Rinse the electrode thoroughly with ultrapure water. Perform the electrochemical cleaning procedure as described in the application documentation, see [Application Finder](#).
3. Repeat the electrochemical cleaning procedure if necessary. Always use a new cleaning solution and continue until the baseline current is more positive than $-1 \mu\text{A}$.



NOTICE

The regeneration procedure is aggressive to the electrode and should only be carried out

1. if no other procedures such as prolonged electrochemical cleaning results in a satisfactory baseline or
2. if the electrode has turned completely black (not dark gray).

The treatment with nitric acid can only be repeated 2–3 times in the lifetime of the electrode. After that, the electrode cannot be recovered anymore.