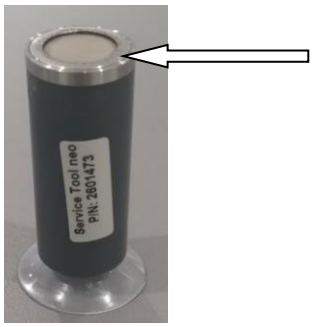
Installing a REDOX – filter

LabMaster-aw	LabMaster-aw neo
	
Remove the metal web sieve, which won't be used afterwards.	Remove the metal web sieve by using the magnetic service tool.
	
Place the Redox filter and fix it with the fixation ring.	Place the Redox filter to the service tool
	
Make sure to use the standard fixing ring delivered with the instrument or order spare P/N 2600210	Mount Redox filter back with the service tool

Calibration:

*Always calibrate **with** filter in place!*	*Always calibrate **without** filter in place!*

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Recommendations for use and handling of Redox Filters

General items

The active filter material is Silver Manganate(VII), AgMnO4. Due to the chemical nature of this compound, it has to be stored in an air tight container and under exclusion from light, especially UV radiation. These conditions are fulfilled by the original package. Once mounted to the BSK, LabMaster or LabMaster-aw-neo measurement head, the material is exposed to ambient atmosphere. During operation and storage, the filter material may not be brought into contact with liquid water; the material itself has a very low solubility but could be partially leached out by splashes of water.

Construction

The active filter material is contained and sealed between two polypropylene fabric membranes, fixed to or pressed to metal housing. All materials have been chosen to be neutral towards humidity equilibration processes. The Redox Filter therefore is a passive component of the measurement setup, which may affect the equilibration time, but not the equilibration level. It should be kept in mind, however, that during operation the active filter material will take up reaction products and therefore may change its properties with regard to both, equilibration time and equilibration level. We could not observe neither of these possibilities to occur on a time scale of one month, but they may well turn up upon long term operation of the ensemble. In this case, the filter has to be changed, to ensure calibration and a reasonable reading time.

Handling and Follow-Up during measurements at site

As the filter material is necessarily just loosely packed, it might have sedimented due to mechanical vibrations during transport and might thus have left small open pathways, where emanations from the measurement chamber could pass the filter without chemical interaction with the active filter material. In order to prevent this possibility from going on unnoticed, after opening the sealed filter package, the filter should be taken up with tweezers, slightly shaken horizontally and carefully pushed with its lower side flat onto a desk´s plate. This will distribute the powder equally over the whole width of the filter diameter.

For fitting the filter into the measurement head, proper laboratory gloves or fine cotton gloves should be used, as they are common for preparative work in electron microscopy. Care should be taken to avoid any damage to the filter, especially to its upper membrane. In case of mechanical damage, put the filter back in its original transport packaging or in an appropriate small container. Wipe the powder and dust off with a dry, smooth cotton fabric. Wash off any traces of the dark violet powder from gloves and/or skin.

THE FILTER MAY NOT BE TREATED AS ORDINARY WASTE AND MAY NOT BE DISCARDED TOGETHER WITH ORGANIC MATERIAL OR MIXED WITH OTHER CHEMICAL PRODUCTS.

Instead, we recommend to collect used filters in a properly marked container and to deliver it to any authorized treatment for chemical laboratory waste.

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