

Installing the oil mist filter on the foreline pump

Author

Dan Kalu Appulage and
Stephan Meding
Thermo Fisher Scientific,
Germering, Germany

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Goal

Best practices for installing oil mist filters for the foreline pump.

Introduction

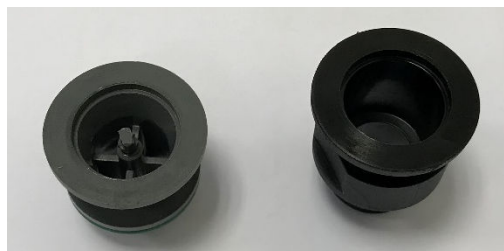
The Thermo Scientific™ ISQ™ EC and EM single quadrupole mass spectrometers require an external rotary oil pump to support the turbomolecular pump. The pump can be operated with either 230 V or 110 V. Power should be supplied through the mass spectrometer, using its dedicated power socket to couple the foreline pump operation to the mass spectrometer. An oil mist filter must also be installed on the foreline pump with its exhaust line must be routed to the house exhaust.

Since improper installation of the oil mist filter may result in oil leaks, which are often falsely attributed to the foreline pump itself, best practice for operation is described below. General installation of the foreline pump is not covered here; detailed installation instructions (including pictures) are given in the operating manual for the ISQ EC and EM.

A small amount of oil on top of the foreline pump near the oil inlet and exhaust port may be observed. Wipe this off with a paper cloth and check regularly whether there is a continuous build-up. Small oil accumulations are not a functional issue but larger ones require checking the tightness of the inlet plug and oil mist filter connections. There should not be oil accumulating below the pump.

Best practices for installing the oil mist filter

- Install the appropriate adapter (gray) connecting the exhaust port of the foreline pump with the oil mist filter assembly. Do not use the black adapter which is added by Edwards to the oil mist filter kit.



right

wrong

- Thoroughly tighten the gray exhaust port adapter on the pump using a 1" spanner or an adjustable wrench. Afterwards, install the oil mist filter. Make sure that the adapter does not get loosened while installing the mist filter. The oil mist filter should be oriented in the right direction before tightening so that the oil return kit can be connected.
- Install the oil return kit without turning the installed oil mist filter, otherwise the connection of the oil mist filter to the foreline pump gets loosened. Make sure you install the gas ballasting adapter and set it correctly. Don't forget to put the brass restrictor bushing into the black hose that connects the oil mist filter to the ballasting adapter.
- Make sure the exhaust hose installed on top of the oil mist filter doesn't pull the oil mist filter to one side. This may eventually cause a small gap between the pump and the exhaust adaptor which will result in an oil leak.
- The exhaust hose needs to be connected to an exhaust system which is at atmospheric or slightly negative pressure. If this isn't done, pressure may build up in the oil mist filter and cause it to leak.
- Sometimes the mold lines of the oil mist filter where the filter touches the exhaust adapter have plastic leftovers which prevent proper sealing. These should be removed carefully to assure proper sealing.

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