

How to exchange the filter elements of the purge gas generator

Jan. 2014

Note: There are three different filter elements, which should be exchanged regularly:

- filter element for 3C-020-P02-Fi coalescer (red one)
(every 6 months: on January and July)
- filter tube and a moisture indicator cartridge
(every 12 months: on January; you can skip steps 7-13)

filter element for 3C-020-P02-Fi coalescer

1. First, check the all gauges

These are the conditions before exchanging old filters for new ones



Prefilter



2. Remove the two walls of the purging box which surrounds the ellipsometer in order to get access to the compensator



3. Now remove the compensator from the main body.



Removing this part.



Using a screw driver and removing each screw.



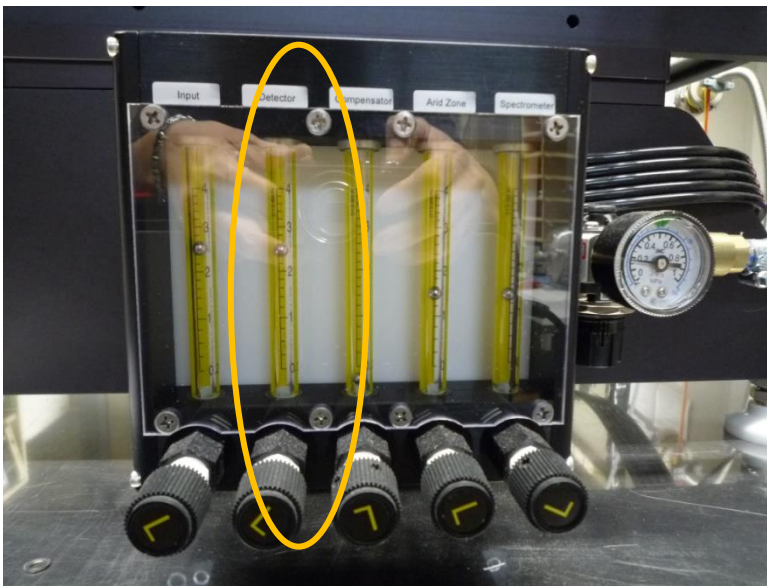
Removed it completely.



At that time, two connectors are also removed from the compensator.

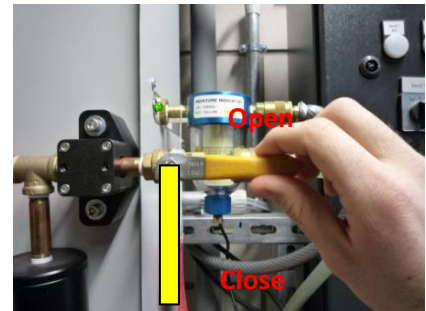


Keeping the removed part in the desiccator for a while.

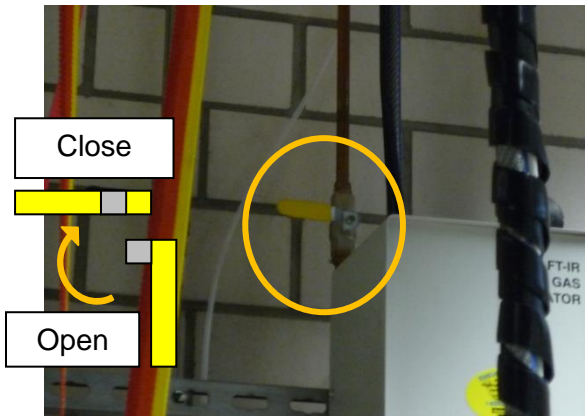


Now, the flow scale of compensator must be zero.

4. Cut off the power supply of the moisture indicator (plug off), then close the yellow valve of the FT-IR Purge Gas Generator



There is another valve above. Need to close it.



Must be closed here

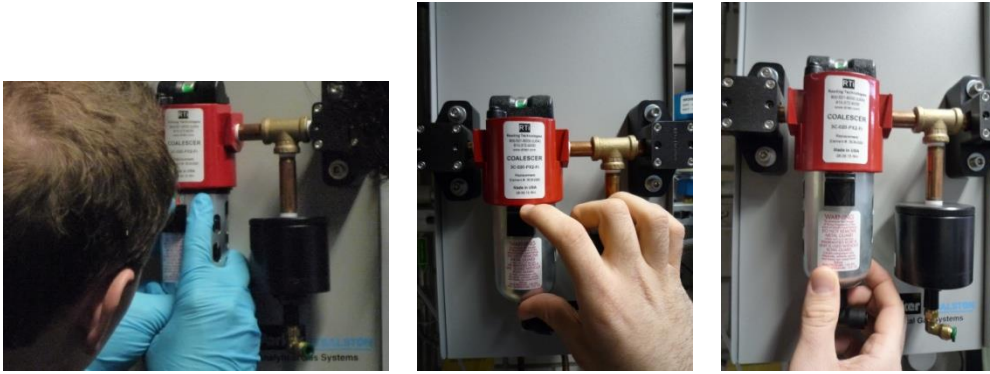


All the values indicate zero

- Remove the silver metal cover of the prefilter. Twisting a bit and pulling it down. Afterward, using a same method, and pulling the dirty prefilter gently. Quite large amount of oil was absorbed in the filter



6. Now replacing a new filter and stabilizing the new filter with the silver metal cover

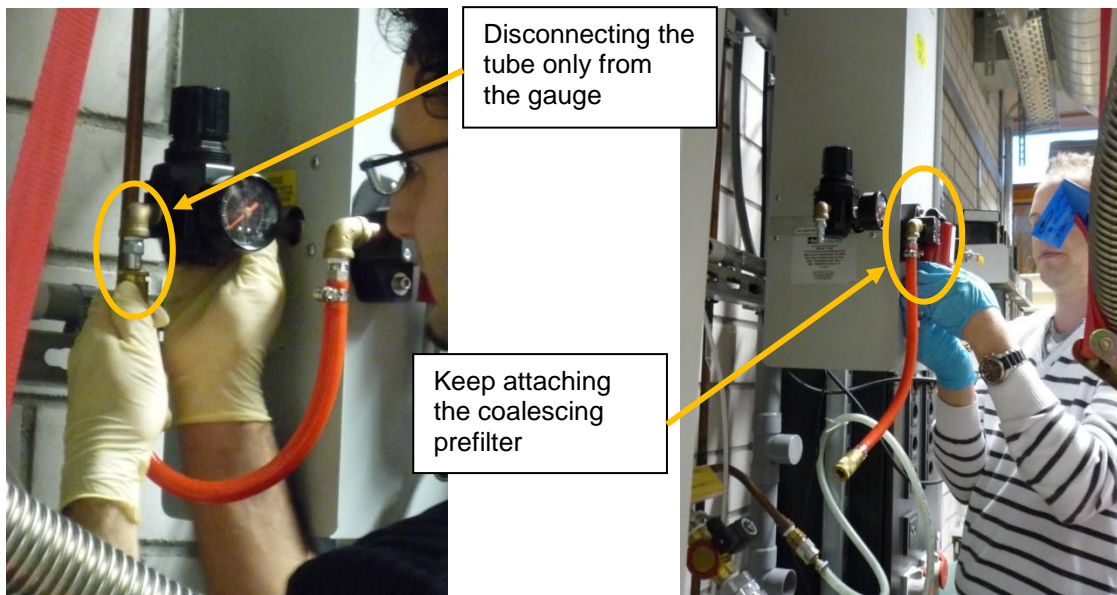


The prefilter exchange is over with these procedures. Now, move on to the exchange of a moisture indicating cartridge.

If it is summer you are lucky, you can skip step 7 – 13!

filter tube for Y83-700-BX coalescing prefilter

7. Disconnect the tube from the gauge.

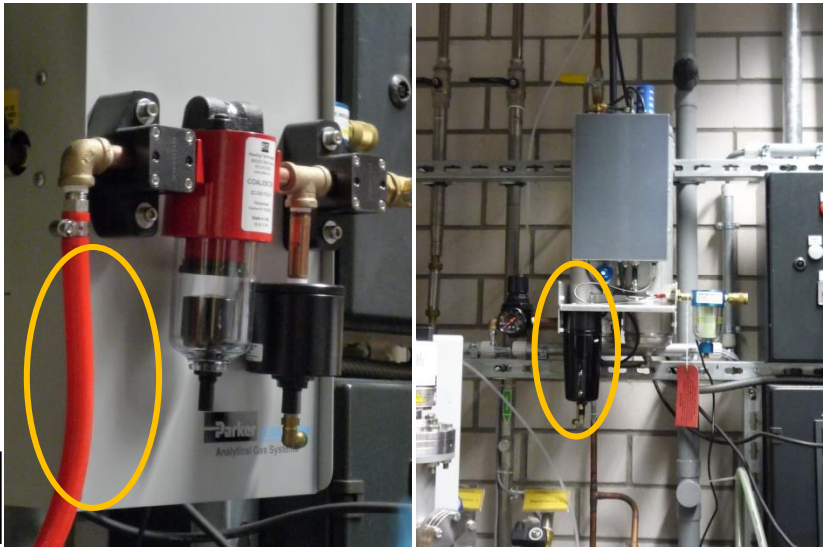


8. The location of the filter element for 3C-020-P02-FI coalescer is in the metal cover like a box. You can but you **do not have to** remove the metal box. You can get access through the open end at the bottom of the metal cover.

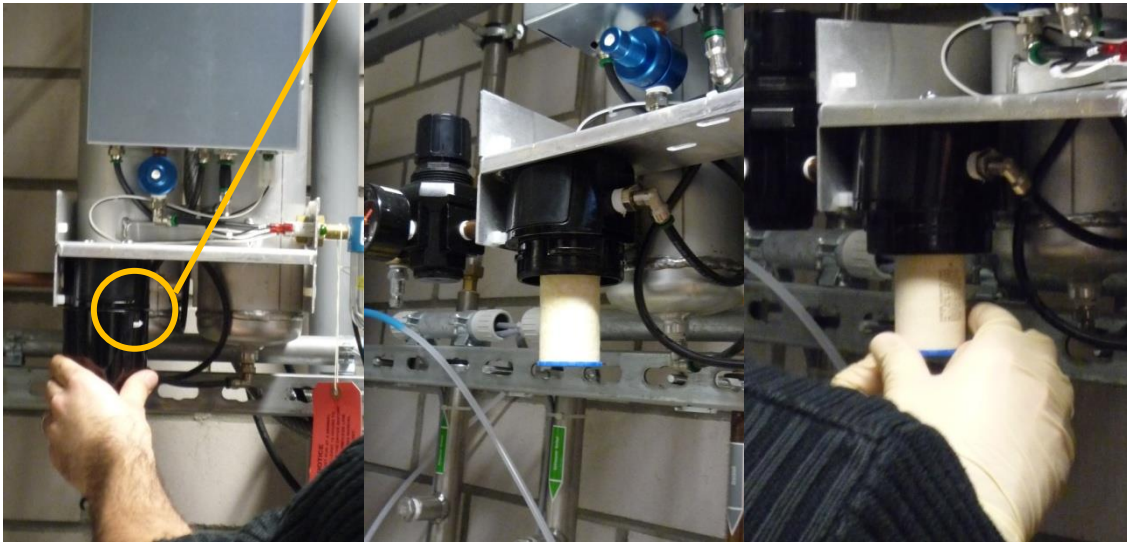
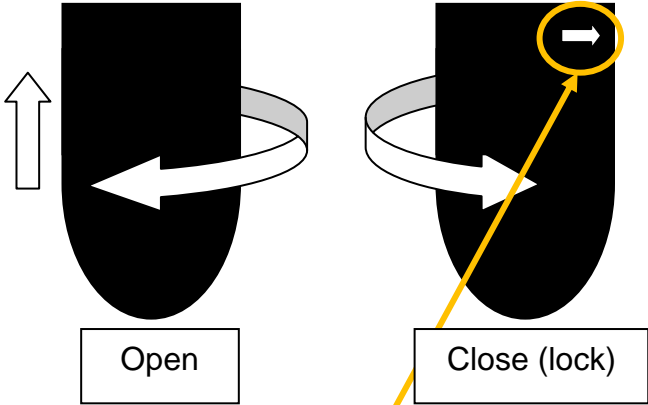
This is a photo from bottom.



The location is on a left foreside corner.



9. Open the black filter container



There is a small arrow for lock.

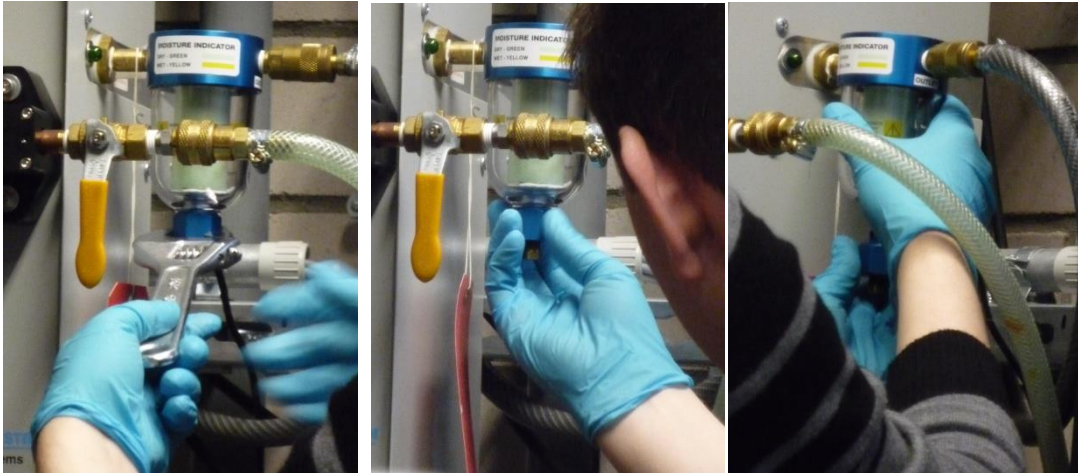
This is the inside. Need to pull it down gently.

Exchange the filter. Pushing it up slowly.

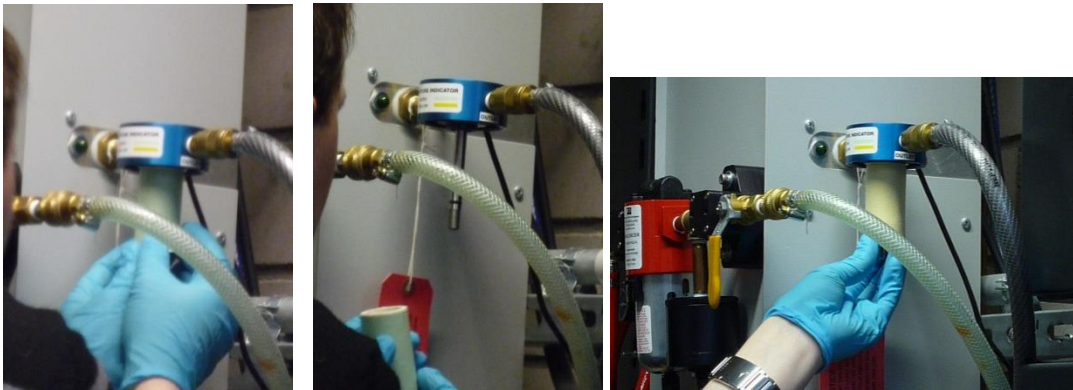
10. Put the black filter cover back. It seems to be loose but it will tighten when air pressure is swichted on

Moisture indicating cartridge

11. First, need to remove a big blue screw on a bottom part of the glass cover by making use of a wrench

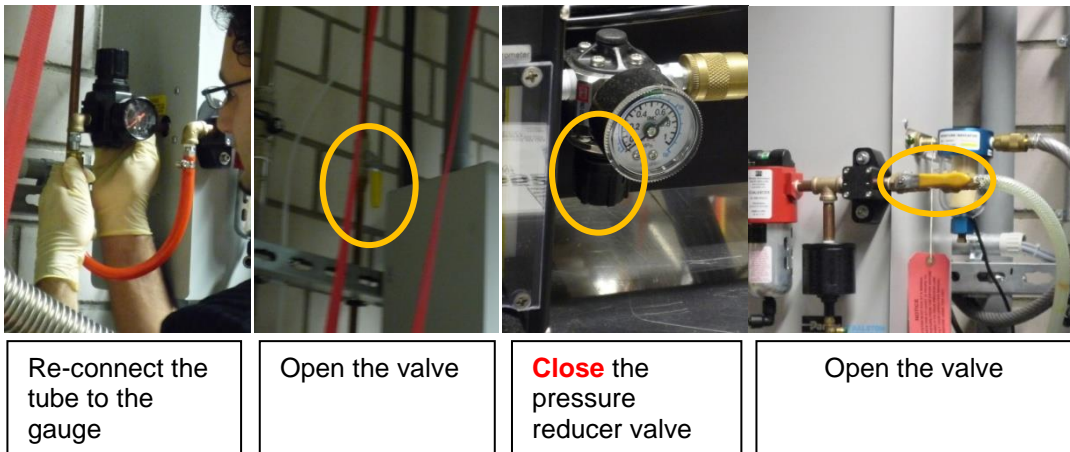


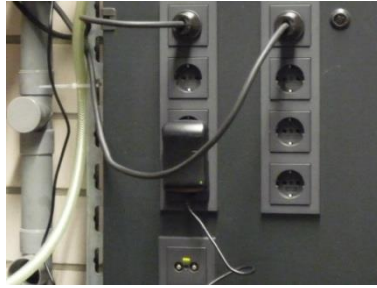
12. Removing the dirty filter and replacing with the new one. At first, the color of the filter is yellow, but once the yellow valve is opened and gas flows inside of the moisture indicator, the color of the filter will change to light green (yellowish green)



13. Again putting the glass cover back and stabilizing the filter and the glass cover with the big blue screw which should be tightened up with the wrench.

14. After all the filter are replaced, restore all





Plug in



100 lbs/in² (7 bar)

15. Now wait for **10 minutes**. During that time air only flushes into the purging box (which is open). After that open the pressure reducer valve.



Now nearly all gauges should indicate the values just like before the replacement. Of course not the one for the compensator



0.2 MPa



2.4, 2.4, **0**, 1.4, 1.4
Note: The flow rates are a little higher than what the manual said because there was a problem with the stability of CO₂/H₂O concentrations before (by Robert).

16. Now wait for **2 hours** before you mount the compensator. If you changed the moisture indicating cartridge it should change from light yellow to light green!



17. Put the compensator back to the ellipsometer and plug the two connectors.



18. Put the two walls of the purging box back



... and you're done!

Note:

- There is some company information for these replacement parts in a manual from J.A. Woollam Co. Inc. However, McMaster-Carr (USA) does not send out their products anymore (3C-020-P02-Fi coalescer)
- It is possible to buy a product (3C-020-P02-Fi coalescer) from Reading Technologies, Inc. (USA) in England (not in Germany). Duncan Rogers takes care of their products. When you want to order it, you can use the website "Airlines-pneumatics)
- It is possible to order the filter tube for Y83-700-BX coalescing prefilter and moisture indicator cartridge (kit) (product from Parker Hannifin) in Germany. Contacting company in Germany is WICOM (Liebigstr. 16 D-64646 Heppenheim).

Company and price information

- 3C-020-P02-Fi coalescer (ordered Nov.. 29 2010)
Ducan Rogers (Engineering) Ltd
396 Hillington Road, Glasgow, G52 4BL, UK

2 filters for 89.84 GBP (78.93 Euro) (1 for 55.20 GBP)
Shipment 22.00 GBP (26.12 Euro)
- Filter tube for Y83-700-BX coalescing prefilter and moisture indicator cartridge (kit) (ordered Nov. 26 2010)
WICOM Germany GmbH
Liebigstr. 16
D-64646 Heppenheim, Germany
info@wicom.de
Tel. 06252-67370

Maintenance Kit 182,75 Euro (15% discount: Normal price 215,00 Euro)

Aug. 18 2011 by Akemi
Update Jan. 27 2012 by Akemi
Update Jan. 29 2014 by Michael