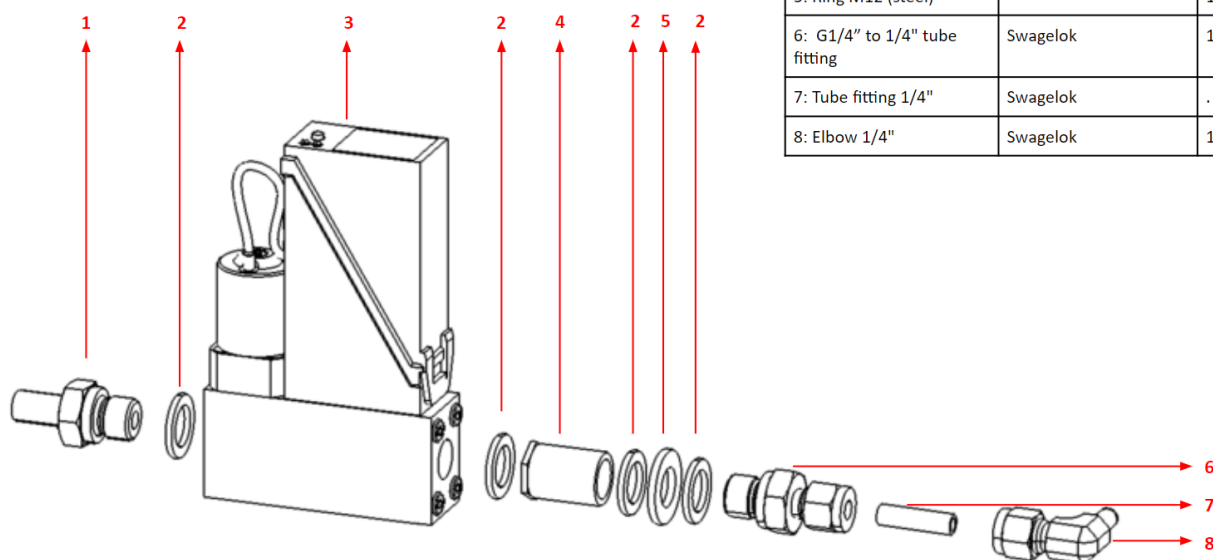


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Revision	Date	Modifications	Author
V1.0	08-04-2020	Setup first version	Imke Gevers
V1.1	13-04-2020	Image additions and elaborate	Jeroen Roest / Bart Spel
V1.2	16-04-2020	Overview of materials	Jeroen Roest/ Bart Spel
V1.3	27-04-2020	Translation from Dutch to English	Karin Olthof

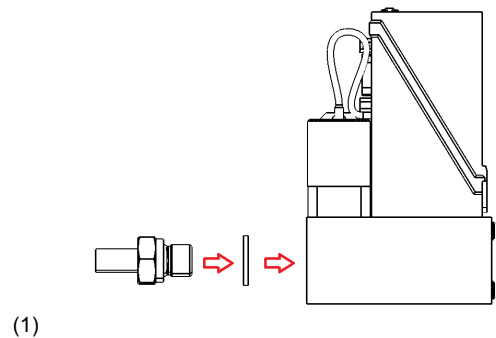
This work instruction describes the assembly of the NIST fitting and the mixing chamber (MFC parts). The Swagelok parts used in every step are described by their product name to guarantee that the right components are used.

Part	Supplier	Quantity
1: G1/4" to 3/8" tube fitting	Swagelok	1
2: Ring G 1/4" (rubber)	Swagelok	4
3: MFC (Air)	Bronkhorst	1
4: Pressure regulator (4 bar)	Kramp	1
5: Ring M12 (steel)		1
6: G1/4" to 1/4" tube fitting	Swagelok	1
7: Tube fitting 1/4"	Swagelok	.
8: Elbow 1/4"	Swagelok	1

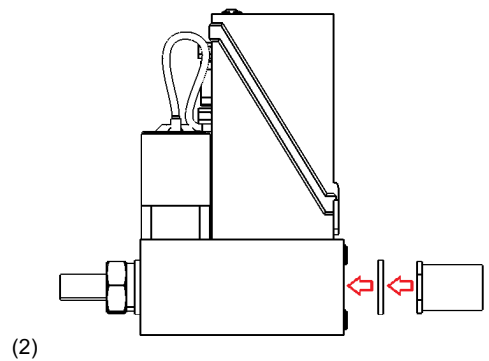


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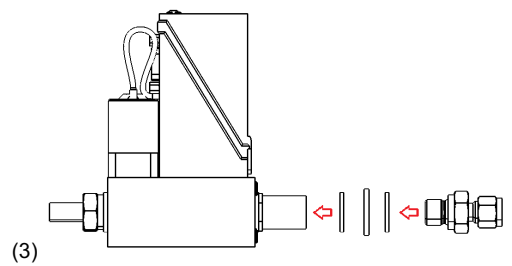
- (1)
- Check whether the MFC is labelled 'Air' on its side.
  - On the side that will be connected to the mixing chamber (where the flow arrow on the side of the MFC is pointing towards), a G1/4" to 3/8" metal tube fitting needs to be inserted.
  - In between these parts, a 1/4" rubber ring needs to be inserted (see figure 1.1)
    - 1/4" rubber ring: SS-4-RS-2V.
    - G 1/4" to 3/8 metalen buis: SS-6-TA-4-RS.



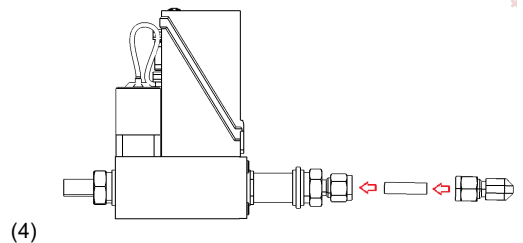
- (2)
- On the other side of the MFC, a pressure regulator needs to be turned in. In reality, the pressure regulator has a male fitting, which is not in accordance with figure 1.2.
  - In between these parts, a 1/4" rubber ring needs to be inserted (see figure 1.2).
    - 1/4" rubber ring: SS-4-RS-2V.



- (3)
- In the pressure regulator, a G1/4" to 1/4" tube fitting needs to be inserted. This part needs to be closed off with multiple rings.
  - This is done by inserting 2 rubber rings (1/4") and a metal ring (to separate the rubber rings). De metal ring should be inserted in between the two rubber rings (see figure 1.3).
    - 1/4" rubber ring: SS-4-RS-2V.
    - G1/4" to 1/4: SS-400-1-4RS



- (4)
- A 1/4" tube fitting (length  $\pm 4.8$  cm) should be mounted to the connection shown in step 3. For this, the above mentioned connection can be used (see figure 1.4).
  - On the other end of the tube fitting, an elbow 1/4" should be connected.
    - Elbow 1/4": SS-400-2R-4.



When the assembly is executed correctly, the result will be similar to the images below.

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